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FEBRUARY, 1936

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The Maelstrom of Atlantis
by JOSEPH W. SKIDMORE

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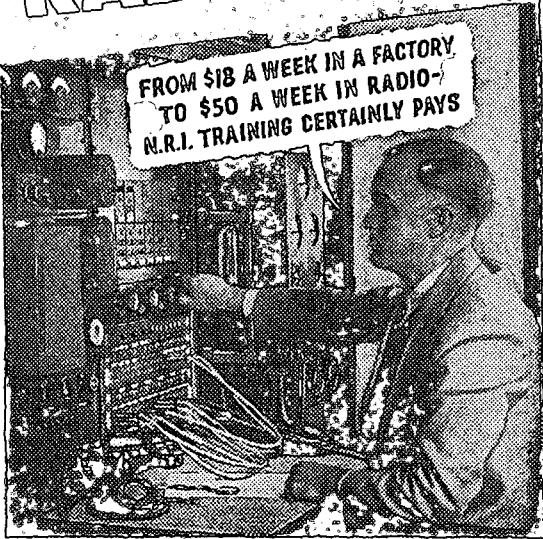
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AMAZING STORIES

Science Fiction

Vol. 10

FEBRUARY, 1936

No. 8

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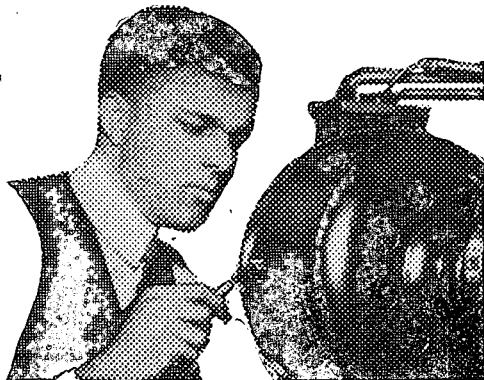
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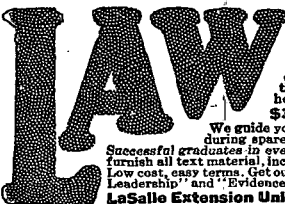


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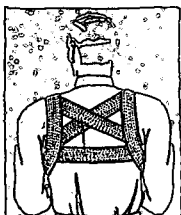


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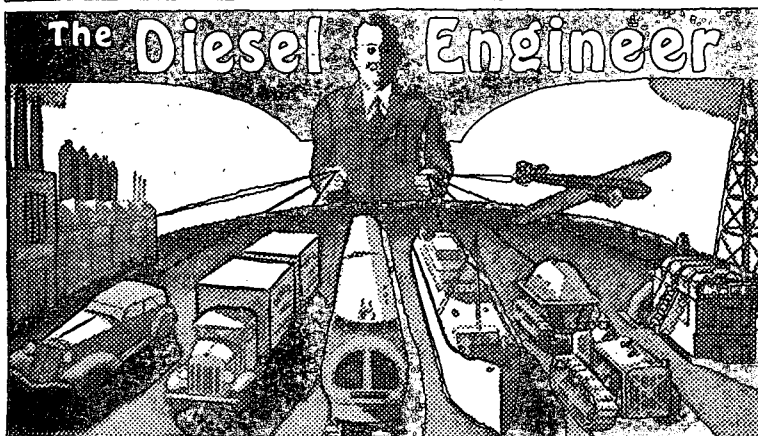


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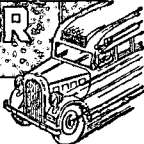
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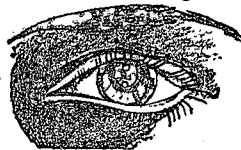
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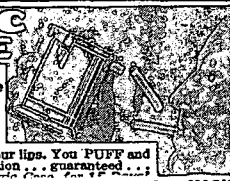
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Extravagant Fiction To-day Cold Fact To-morrow

Gas Lighting

By T. O'CONOR SLOANE, Ph.D.

SOME centuries ago a scientist of the day became interested in the gaseous state of matter. He certainly did not know a great deal about it. It is within the memory of some, not of most of us, that a curious distinction was made between gases. Some with the meagre appliances of the day resisted attempts to be liquefied. These were called permanent gases. There is no such thing as a permanent gas. Any gas under proper conditions will cease to be a gas and will become a liquid, and under very extreme conditions of temperature and pressure will become a solid. Old Von Helmont (1577-1644) casting about for a name for gases and perhaps feeling that they were rather puzzling things, took the Greek word "chaos," and coined out of it the word "Gas." At least that is what we are told.

In the realm of nature we are very familiar with gases. Natural gas is flowing out of any number of pipes,

driven to considerable depths into the earth, so-called "gas wells." The gas is a hydrocarbon mixture, and is burned for heat and light. It comes in such volumes that it often is allowed to burn all day in the street lamps.

Millions of cubic feet of hydrocarbon gas and carbon monoxid gas are being produced in gas works.

In view of all this it is interesting to go back a number of years in the history of the illuminant and heating agent, and see how its use was brought about.

Less than two centuries ago, in the year 1739, Dr. James Clayton published a paper in the Transactions of the British Royal Society, telling of some of his experiments with Newcastle coal, a soft coal it is generally called now. He tells of heating it and obtaining an aqueous fluid, a black oil and an inflammable gas. The engineer of today would call the first of his products, ammonia water, and the next coal tar. He would not ob-

ject to the word gas. Clayton collected the gas in bladders, and pricked holes in them and lighted the gas as it came out. Not far from that time a Dr. Hales made gas, on an experimental scale, from coal by heating it in a retort.

In the year 1767 the Bishop of Landaff in Wales, repeated substantially these experiments. Going from a Bishop to a Jesuit priest we are told that Father Dunn, S.J., introduced gas at Stoneyhurst, and in 1815 lit the village of Preston with it. His portrait hangs in the Town Hall of that place.

Curiously enough one of the miracles of nature on a small scale demonstrated to mankind what gas light was. There were several places where natural gas escaped from the surface, perhaps from crevices in the rocks, and burned day and night. These were little flames but are accepted as accounting for "perpetual flames," to which a mythological significance was given in ancient times.

But it is less than a hundred and fifty years ago since mankind was waked up to the idea of lighting house and street with gas, and when the whole civilized world was so lighted along came the electric light to replace it. Illuminating gas may be said to have had a life of about a century. Now it is relegated to the kitchen for cooking, and for minor heating purposes. Yet today in a village of many thousand inhabitants the street lamps are supplied with gas, turned up and down by clocks, but never extinguished. The writer knows about this village because he lives in it.

When people found oil floating on the surface of streams they used to soak it up in blankets or clothes and squeezing it out would thus collect it. No human being could imagine

that petroleum, etymologically "rock oil," was to be what it now is. It was the same with illuminating gas. It took some years to bring it into use. In a book on the subject published in the year 1818, complete descriptions are given with quite impressive illustrations of how coal gas can be made on a practical scale. The name of the author was Fredrick Accum. He is naturally a great advocate of the new illuminant but the best he can do, in the way of telling what it has done, is to give statistics of factories which have made it for themselves. Some burners gave a light of four candles, others gave only one of two and a quarter candles. This is in strange-contrast with a fifty candle power electric burner.

But very soon the use of the new illuminant spread. One of the troubles was to get pipes for it. Gun barrels were used at first. There was an idea that the pipes might get hot. When it was decided to introduce gas into the Parliamentary Buildings in London the architect specified that the pipes were to be kept six inches from the woodwork, for safety from fire. The story went the rounds that London was to be lighted with air.

The distribution of gas through mains, as subterranean pipes are called, goes back to the year 1806 when street mains were laid in London. They were made of sheet lead, bent around so as to make a cylindrical tube and the joint was soldered.

But it was soon found that there were various impurities in coal gas in the way of sulphur compounds, which would have to be removed in the process of manufacture, as they produced sulphurous acid in the combustion of the gas, which was very deleterious in more ways than one. Ammonia was also deleterious and

that was present. The sulphur was often removed by passing the gas over the surface of slaked lime, the ammonia by washing with water, in a spray-like form.

These treatments were applied as the gas was on its way to the gas-holders. They were applied in what were virtually parts of the conduit through which the gas passed. Other substances such as hydrated iron oxide were sometimes used instead of lime.

Then came the water-gas revolution about 1871, and this was a long battle. Gas had hitherto been made by the original process of the oldtime experimenters. Soft coal was heated in a closed retort and the gas was purified and burned. The new water gas process passed steam through a mass of white or red hot anthracite and the water was decomposed. The oxygen combined with the carbon forming combustible carbon monoxid, the same gas that has occasioned a number of "garage deaths." Giving up its oxygen the hydrogen of the water went on through the conduits mixed with the carbon monoxid in equal volume therewith. This mixture of gases was absolutely non-luminous. Petroleum or some petroleum product was added to it and the mixture was heated to convert the added hydrocarbon into a "permanent" gas, permanent only to a limited extent, but that extent covering the conditions of its use in house and elsewhere.

The gas produced in a closed retort from soft coal is called coal gas. The gas produced by passing steam through white hot anthracite coal is called water gas.

The development of the water gas process in this country was largely due to the anthracite coal and petro-

leum, natural products identified with the United States.

This revolution lasted years and it is fair to say that the old time coal gas is almost extinct here. Then there came another revolution. A gas burner consuming five cubic feet of gas an hour was supposed to give the light of from sixteen to twenty five candles. The well known Bunsen burner using any amount of gas produced a non luminous flame, giving virtually no light. Then the idea was formulated to burn gas in Bunsen burners and use the hot flame to ignite some of the so-called rare oxide. A cylindrical cotton wick was saturated with a solution of the desired mixture, was dipped in melted paraffin wax or collodion to stiffen it so that it would stand handling and transportation. This was carried by a little wire support above the Bunsen burner. When the burner was lighted the paraffin or collodion burst into flame and was burned up, leaving the fragile wick suspended over the flame and giving a brilliant white light. It was a revolutionary improvement, but all the while the electric light was looming on the horizon. In the middle seventies the gas investors were frightened at the prospect of the electric light competing with gas. Then came the historic problem of the division of the electric light. It was a simple matter to produce the arc light, "rated" at two thousand candles but really much less in most cases. But what was wanted was an electric light of about the intensity of an ordinary gas burner in light emanation. Edison took up the problem and produced the carbon filament incandescent lamp, which was a complete solution of the problem of the subdivision of the electric light.

But in spite of all apprehensions

the manufacture and demand for gas continued. More and more gas was made. It supplanted a vast quantity of coal for cooking purposes, although it might very well be described as transformed or decomposed water and coal product with an addition of petroleum.

The incandescent-oxide burner, the Wellsbach burner as it was named from its inventor and developer, used but a fraction of the gas per candle power that the ordinary flaming burners did, and replaced them rapidly. They were in active competition with the carbon filament incandescent lamp, called sometimes, in derision, the red-hot hairpin. But the Edison lamp solved at one swoop the problem that had occupied the inventors in the field of electric lighting for years. It gave a small unit light, just what the world had been calling for, if the electric light was to be used in houses, and it solved another problem that is all that enables us to use the wonderful tungsten filament lamps of to-day. It made it possible to substitute for the series connection of arc lamps the parallel connection of incandescent lamps. The candle power compared more or less with that of the old time gasburner. The Wellsbach burner could be made to give a light of higher intensity than the carbon filament lamp of domestic calibre gave, so here electric lighting was in direct competition with gas lighting. It was an interesting phase in the war, and the old fashioned gas was giving a rather good account of itself. The discharge of the products of combustion into the atmosphere of living rooms was a bad feature, but that was reduced in proportional amount by the smaller consumption of gas per unit of light by the Wellsbach burner.

The salts of thorium and cerium were decomposed in a few seconds

by the non-luminous flame and the "mantle" as it was called became brilliantly hot. It gave four or five times the light of the ordinary gas burner per foot of gas. And this was what the relatively new electric light had to compete with. To produce the Wellsbach light a Bunsen burner was essential, and this was invented in 1855. So in a sense we may say that the Wellsbach light which was the greatest of all improvements in gas lighting took about thirty years to come into existence. After the decomposition of the salts, there were about 99 per cent of thoria and 1 per cent of ceria in the skeleton of the wick.

The miners of northern Europe encountered in their operations a remarkably heavy mineral of no use, as far as known. It was called tungsten by the Scandinavians, meaning "Heavy Stone." The German miners for some unsolved reason named it "Wolfram," "Wolf's Foam" is a possible rendering, although the German word "Rahm" has three distinct meanings, so there is a choice open to us. The metal, tungsten, is the characteristic constituent of the mineral. It can be reduced from the ore but is so difficultly fusible, that special treatment, only recently elaborated, can bring it to anything like the condition of such a metal as iron or platinum. But after many trials it has now been brought into subjection, and when drawn into wire makes the ideal filament for an incandescent lamp. This is about three times as economical as the carbon filament which did such good duty for so many years, and it gradually killed off the old carbon filament lamps and gave the death-blow to gas-lighting, and gas was relegated to the kitchen in dwelling houses and kitchenette in the omnipresent apartment house.

The Lurking Death

By DR. WALTER ROSE

This is the first story from this author and is a contribution from Cape Town, South Africa. There have been a good many notices in recent dailies about the terrible Black Widow Spider, whose bite it has been claimed is absolutely fatal. It is enough to tell our readers that this is a spider story and will show them how dreadful a spider under definite but fortunately impossible circumstances might become.

ALTHOUGH probably millions of people read of and discussed what became known as "The Rondebosch Mystery," the amazing solution was known to very few indeed. Every effort was made by the authorities to hush up both the death of Sergeant Davis and also the actual denouement, which was explained away as the somewhat ill-advised means adopted by a neighbouring resident to dispose of an undesired war souvenir. It so happens that I am one of the few people who know the real outcome of this queer affair, playing as I did some small part in its solution, and, now that time has somewhat relaxed the official stress of secrecy, no great harm can result from my telling the story, with changes of the names of some of the participants.

The mystery may be said to have commenced with complaints from the people of Rondebosch, more especially those living in houses bordering on the common, of the increasingly frequent disappearance of their domestic pets. Now although dogs, especially those of good breed, are often the victims of sporadic and even organized theft, it was argued that few people take the trouble to steal cats, for which no market exists.

Had the occurrences taken place

near, say, the east end of London, an effort to supply the fur markets might have been suspected, but in a place like Rondebosch such an explanation hardly carried conviction. The theory most of the bereaved owners favoured was that their pets had fallen victims to one of those sub-human fiends, whose unbalanced depravity finds outlet in cowardly and promiscuous poisoning of harmless and affectionate animals.

Then one night a small, coloured errand-boy sent with a message to a house near the common, failed to return and no trace was ever found of him despite a persistent search. When this was followed a few days later by the complete disappearance of a maid-servant on her way home from the local bioscope, definite alarm was felt and an extra close investigation was made of the vicinity by the police, several suspicious characters being detained and closely questioned. All in vain, however, for the enquiries revealed absolutely nothing beyond the fact that the girl had been last seen near the common, going in the direction of her employer's house.

This seemed definitely to negative the suggestion that the girl's disappearance was of the nature of a clandestine elopement.



"Iridomyomex Humilis!" cried Gartside, *"But that is just the common Argentine ant."*

The excitement caused by this case was still acute when it was raised to fever heat by the equally complete vanishing from the sight of man of a well-known Claremont auctioneer, named Smith. As ascertained, he had spent the evening with friends at Pinelands and had left there, well, in good spirits and perfectly sober, at about 12:30. No one ever saw him again. At 3:15 a patrolling constable found his empty car on a road beside the common. The lights were full on, the right front wheel tire was punctured and jacked up, the open toolbox and a spanner lying by the wheel clearly indicating how the missing man was occupied at the moment that he was seized by what now became known as "The Hidden Death."

The whole district was gone over again with, as it were, a fine-tooth comb, but without result. The police were at their wit's end and the wildest theories were put forward by the public, ranging from an escaped lion from the Groote Schuur zoo to a homicidal maniac using a motor car. One letter to the papers suggested the activities of a secret society practising a cannibalistic cult, kidnapping for ransom being ruled out by the social position of the first two victims. Another writer maintained that the only explanation was that the Devil himself was "walking abroad seeking whom he may devour" and demanded that a procession of priests should patrol the common with "bell, book and candle," and exorcise the Fiend.

Driven to desperation by the storm of public protest and criticism, the police made the experiment of setting a trap for the elusive criminal, if such indeed were responsible. Their preparations were made with great care and the strictest secrecy and were planned with military thoroughness.

"Zero" was fixed for 1:30 a.m. At 1:25 a car, with lights extinguished, containing the chief inspector, two superintendents and a sergeant who had courageously volunteered for the job, pulled up at one corner of the common and set down the sergeant, who immediately set off diagonally across the common.

Meanwhile some thirty motor cars manned by over a hundred men, converging from seven or eight different directions, silently and in darkness formed a complete cordon round the common, facing inwards. By the time the intrepid Sergeant Davis, who was thus taking his life in his hand, had disappeared in the gloom, every car was ready, the finger of every driver on the light-switch, the other occupants standing in readiness beside the cars. All were armed with revolvers, their orders being to fire at once at any animal, or at any person who refused to halt on command.

Anxiously and with nerves taut, everyone waited, eyes straining in a vain effort to pierce the darkness into which the devoted man had vanished. Then the double flash and report of two shots followed by a shrill scream, and immediately sixty headlights flashed forth and a hundred men converged on the side of the shots.

And what did they find? The revolver, two chambers discharged, and nothing else. Sergeant Davis and his mysterious assailant, man or beast, had disappeared as if the ground had swallowed them or the sky had snatched them up, and a minute search, continued in daylight, of every inch of the common revealed nothing to elucidate the mystery.

THE details of the ambushade and tragic futility of its outcome were never revealed to the public. as

a wild and serious panic was feared. I heard it in confidence the next day at Gartside's rooms, where I had gone to return a book, from Superintendent Drake whose arrival synchronized with my own. Drake, who had been up all night, was obviously rattled, and gratefully swallowed the whisky and soda, that Gartside put before him, when he had concluded his tale.

"Contrary to my custom, Mr. Gartside," he said, "but I feel that I need it. The sight of that poor chap going off like that and just disappearing into thin air has shaken me up pretty badly. Cannot you suggest anything, Mr. Gartside? You managed that Sea Point business pretty neatly, and, though it seems a good deal to expect when we are all stumped, perhaps you can make some suggestion that will help us. Normally sane people are starting to favour that visitation of the Devil nonsense, and some preacher is holding a prayer meeting on the common at this moment. Damn it all, man," he burst out, "this is the twentieth century, surely nobody in his senses believes in that sort of spookery nowadays."

Gartside smiled, "I think that on consideration you will find that a belief in the supernatural, on far less cogent evidence, pervades and influences the thoughts of the average person to an amazing extent. But let us take, in turn, the various theories that have been suggested and see to what extent, if any, they can be considered plausible.

"Now first let us take the predatory beast theory, which suggests that some necessarily large carnivorous animal, such as a lion or a tiger is responsible. Apart from the fact that we have had no report of the escape from captivity of such an animal; we have the practical impossibility of a crea-

ture of that size escaping notice in a populous suburb. Then the absolute absence of any spoor or sign of a struggle or of blood, and the complete disappearance of the victim, would rule out that explanation, even did not the events of last night, which you have just narrated, place it beyond the region of possibility.

"I take it that no lion or tiger could seize a man and vanish with him from a not extensive open space completely surrounded by police and glaring motor headlights. Similarly the homicidal maniac theory can be set aside, unless we suppose that he is in possession of a silent helicopter aircraft, or lassoed his victim from a balloon, both of which surmises are, to say the least, improbable.

"Examination of the ground, I understand, discloses no trace of any hole into which a victim might have fallen or been dragged, and the time factor in this last case definitely eliminates the possibility of burial of a body, apart altogether from the escape of the murderer. Unless, therefore, we admit the feasibility of some gigantic bat or predatory bird, of a type at present unknown to science, being the culprit, and explain how such was not seen by someone against the sky on nights such as we have had lately; we have nothing else to fall back upon but the supernatural theory, which is as repugnant to me as it is to you."

"You have certainly put it all clearly enough, but I cannot say that you have helped us much," said Drake ruefully, "It is no good proving that a thing is impossible, when it has actually happened."

"Well, I suppose not," admitted Gartside. "The only thing I can suggest is that I should take a run down and look over the ground for myself.

Something may occur to me that you have omitted to notice or to mention, though I hardly think that is likely. But don't attach too much importance to my explanation of the Sea Point case. There I was helped by luck to a great extent, and at any rate had something definite to start upon. Here everything is negative. In fact you have no actual proof that these people are really dead. No, I don't doubt that they are, but there is no definite *proof*. Now you had better go and get your overdue sleep; I will let you know if I discover anything helpful."

Twenty minutes in Gartside's car brought us to the scene of last night's tragedy. There were a few police about, also the usual crowd of "sight-seers", for it had obviously been impossible to keep some rumors of the events of the night before from getting about.

"*Comme les vaches qui regardent passer un train,*" remarked my friend caustically, for he shares the average sensible man's contempt for the type of person who will stand for hours gazing open-mouthed at a broken window-pane or the scene of a car accident, long after all incident has ceased.

WE left the car at one corner of the common and walked slowly around the edge, a few yards from the road. I noticed that Gartside closely scrutinized the trunks and upper branches of the biggest of the pine trees that border one side of the open space.

"Looking for squirrels?" I asked.

Gartside smiled, "In a case like this, when one is at a loss what to look for, one may as well look at everything." Then, nodding towards a large double-story house we were approaching, "That will be where old Professor

Culbertson lives, I fancy. Do you know him?"

I certainly knew the Professor well by repute as an enthusiastic experimental biologist, one of those chaps that tests the connection between guinea-pigs' tails and the attachment of their eyes.

"I have not actually met him," I answered, "but I attended one of his lectures on 'The Responses of Insects to Various Coloured Light Stimuli.' Jolly interesting I found it too, though a bit high-brow."

"A genius undoubtedly," agreed Gartside, "I wonder if he has any theory about this extraordinary business. It is just as likely, however, that he has not heard about it, as he lives in a mental nimbus of his own. Hello, there he is in his garden. Good-morning, Professor, and what is the latest experiment?"

"Morning, Gartside, come in and see for yourself," and briefly acknowledging my friend's introduction of me, the old chap led us into the house and upstairs to his laboratory.

We first glanced at an aquarium, wherein a number of water-beetles were disporting themselves. Glancing at a couple which were nibbling at a bit of meat suspended in the water by a piece of string, my companion exclaimed.

"Hydrophilus and Cybister, are they not? But why are the Hydrophilus and not the Cybisters eating the meat?"

"Oh, that is a simple little experiment involving the transposition of heads. It was first demonstrated at the Vienna Biological Institute, but anyone can do it. Just snip the head off a Cybister (in Vienna the European *Dytiscus* was used) and a *Hydrophilus* of similar size and stick

each back on the other's body. It was found that the head decided the creature's habits. The carnivorous Cybister with the 'Hydrophilus' head becomes a vegetarian, whilst the vegetarian Hydrophilus with the Cybister's head becomes carnivorous."

"The triumph of mind over matter," I murmured to myself.

Near the aquarium stood a shallow tank lined with white tiles in which were half-a-dozen plathanders, or South African clawed frogs, of which five were of a light creamish hue and the sixth nearly black.

"The pituitary gland experiment, I suppose," said Gartside. The Professor nodded and my friend explained to me what this meant.

It appears that *Xenopus laevis*, as our common plathander is called, is very susceptible to the shade of its surroundings, becoming dark when kept in a dark-sided vessel, and pale if surrounded by a lighter surface. In the shallow pools that form its natural habitat, this means that the animal tends to harmonize with its background, be this light sand or black mud, and thus becomes inconspicuous to such enemies as herons, etc. Removal of a small gland above the roof of the mouth—the pituitary gland—however, makes it irresponsive to these light stimuli as shown by the black specimen in the white tank, which was to be given pituitary extract, thus to try restoring its responsiveness.

AT the other side of the room was a large case to which the Professor now directed our attention. From a distance it appeared to contain what I thought were nuishonds, but which I discovered to my amazement to be enormous ants. Even Gartside, who has forgotten more about natural his-

tory than I ever knew, was astonished, and exclaimed.

"I say, Professor, what whoppers. I did not know that even the tropics produced such monsters. What species are they?"

"Iridomyomex humilis," answered the old man tersely.

"Iridomyomex humilis!" cried Gartside, "but that is just the common Argentine ant."

"So are these," retorted the Professor, chuckling at the look of bewilderment on the other's face, "So are these, just ordinary Argentine ants. In fact this is the result of that latest experiment you were asking about. I have made them grow to the size you see them."

"Like Wells' 'Food of the Gods'?" I put in.

"With the exception that that was a fantastic romance, whereas this is a scientifically attained result," remarked the scientist rather stiffly.

"Wonderful, wonderful, but however did you manage it?" asked Gartside soothingly, with a warning glance at me.

"Just a matter of stimulation with rays beyond the ultra-violet," was the answer. "It is well-known that sunlight can definitely cause growth. Setting aside the plant world wherein other factors enter, young spiders, for instance, live for months without food and increase in size to a marked extent, under the influence of sunlight only. I have succeeded in proving that the growth-stimulating factor lies in the invisible band immediately beyond the ultra-violet. This, of course, is normally diluted with the ultra-violet itself and by the visible rays of the spectrum, and is actually retarded by the red and those below it. Treatment of living animals for a few minutes with pure hyper-ultra-violet rays, or

Omega rays as I call them, causes enormous and permanent stimulation of the growth factors—at present not very clearly defined—with the result that the subject grows without restraint for a time and then continues to grow indefinitely to an extent limited only by the amount of the food supply. Each of these ants, for instance, now gets just half a pound of honey a day, which keeps them at their present size. Did I give them a pound a day, they would probably very speedily double in size.”

“Supposing you subjected them to pure sub-infra-red rays, would they become correspondingly small?” I asked, hoping to retrieve my former slip by what I thought was a highly intelligent question. I was mistaken, however.

“The question is based on unsound and ill-considered premises,” retorted the Professor severely. “Science does not create a new vital factor, it merely gives increased activity to a normal one. Growth is a natural phenomenon, shrinking is not. Anyhow, probably the application of the sub-infra-red rays you hypothecate would just burn the subject up.” I subsided and resolved not to make any more brilliant remarks.

“Good answer, Professor,” applauded Gartside, “Parrott was just having his little joke. Still, confess that you have been joking too. You don’t mean us to believe that your Omega rays are responsible for these Brobdingnagian ants.”

The Professor bristled. “I never joke. You naturalists always think that a thing cannot happen, because you have not heard of it happening before. Here, I will show you.” And, taking up a jar containing a few small scorpions, with a pair of tweezers he removed one and dropped it into a

glass specimen-tube. This he placed in a rack, and directing on to it an apparatus not unlike an X-ray machine, twisted a small knob.

“We will give it five minutes,” he said. “The rays are invisible but don’t go too near, unless you want to grow too.”

The exposure being completed, he switched off the knob, closed the tube with a wad of cotton-wool and handed it to Gartside.

“Now keep this and see what happens. When it has finished its first growth, which will be in six hours, give it all the food it will eat and then come back and apologize. Good-day.”

“Funny old codger, and jolly interesting too, but I don’t wonder at your not believing that ray stuff,” I said as we left the house.

“There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy,” replied my friend sententiously.

When Gartside starts quoting in that tone, it is best to shut up ere a worse befall. Otherwise I would have reminded him that he had forgotten to ask the Professor what he thought of the Hidden Death mystery.

AT the gate of the next garden we encountered an elderly gentleman of military appearance, who, from the manner in which he was anathematising the world in general, seemed to be in a towering rage.

“Hello, Colonel,” called out my companion, whose circle of acquaintances was apparently unlimited. “What a glorious day! This is my friend, Mr. Parrott; Colonel Gascoyne.”

“Woof, woof,” replied the other. “Glorious day did you say? Well, I suppose it is, but that won’t do my jasmine creeper any good. Come and see it. You’re a naturalist I believe,

perhaps you can tell me what has happened to it. Here I've been training it up that wall for nearly ten years and now look at it. Scandalous."

The creeper certainly seemed to have had a bad time of it. Obviously once of vigorous growth and nearly covering one side of the house, three quarters of it now hung black and withered. Gartside gazed at it intently with a thoughtful look on his face.

"Looks like the depredations of some insect pest, though it might be the action of some poison or chemical fumes."

"Insect pest be damned," spluttered the Colonel. "What sort of insect withers up a huge creeper like that over-night. I beg your pardon, Gartside, don't mind me, I'm upset this morning. I don't know what the world is coming to. First my old spaniel disappears, then all those people vanish and the police are helpless. Helpless, sir, I don't know what we pay rates and taxes for and Lord knows they are high enough. There may be something in your chemical fumes suggestion, though. Everyone seems to be playing the fool. Saw some lunatic the other night running about the common on all fours. Silly ass. I expect he has disappeared too. Serve him right."

"Then there's that old ass of a professor with his beastly bugs. No offense, Gartside, but I never could stand the things. Dropped in on him a couple of months ago to arrange about having his side of the hedge clipped. Hate an untidy hedge. So slack looking. Showed me some of his bugs. Had some mad idea of perpetual motion or perpetual growth or something of the sort. One of those ray theories, Alpha and Omega, or some sort of rot like that. Got quite ratty when I laughed at him. Who wouldn't laugh at nonsense like that? Put some

beastly insect or other in a tube, pointed a magic-lantern at it for a few minutes and then gave it to me and told me to give it all the flies it would eat. The old ass."

"What did you do with it?" queried Gartside, smiling at the old boy's tirade.

"Do with it, what do you think I did with it? Threw it away, of course. Fancy me spending my time catching flies for some damned bug. I'd be as mad as the rest of them. Shouldn't be surprised if it isn't one of his idiotic experiments that is responsible for the damned creeper shrivelling up. Join me in a whisky and soda before you go, it's a treat to get a sensible man to talk to. Not during business hours? You don't seem very busy. Well, perhaps you are wise. I need one, anyhow. Good morning."

Gartside did not talk much on the way back to town, returning monosyllabic replies to most of my remarks. It appeared to me that our expedition had not brought us any nearer to the solution of the mystery. However, I decided to go round to his rooms after dinner that night to find out if he had thought of anything in the meantime. He set me down outside my office, where I was kept busy for the rest of the day, making up for the morning's outing.

When I arrived, about 8:30 P.M., I found Gartside standing, pipe in mouth, looking at a glass-fronted case in which there was some moving object. The electric lamp was turned so as to illuminate the inside of the case, and I saw that the moving object was a scorpion about eight inches long, holding in its claws a large green caterpillar from which it was sucking the juices.

"By Jove, that's a monster," I exclaimed. "What is it?"

"*Opisthophthalmus capensis*," returned Gartside tersely.

"It certainly looks it," I admitted. "But where did you get it?"

"From Professor Culbertson, this morning," was the surprising answer.

"That? But the one he gave you was just a tiny thing. By Jove do you mean to say that there is something in that hyper-super-ultra-violet ray tosh after all?"

"It seems so, doesn't it," muttered my friend thoughtfully. "Now I wonder. Good Lord, it can't be possible."

BY this time he was hurriedly turning over the pages of the telephone directory, and a moment later was speaking rapidly into the receiver.

"Hello, that you, Professor? Gartside speaking. About that scorpion. Yes, I gave it plenty to eat, as you said, about five o'clock.—About fifty large caterpillars and as many crickets. All I could get.—Yes, I will.—But look here, have you let any of your specimens escape after treating them with Omega rays?—What was that?—Oh, you lost a *Holopterna alata* last week. Yes, I suspected that. Anything else?—Are you positive? Think, carefully, it is important. Have you given any specimens away besides the scorpion you gave me?—Oh, to Colonel Gascoyne. He mentioned something about it.—A *Stasimopus*? Not sure of exact species?—Righto, thanks, Professor.—By the way, don't part with any more specimens till I have seen you again. That's all; good-night, Professor." Hanging up the receiver, Gartside crossed to his book-shelf and, taking down a volume of the Encyclopedia Britannica, found his page and read carefully for a few minutes. As he put back the book and turned to me, I could see that he was quivering with suppressed excitement.

"It hardly seems credible, but I think we have solved the mystery of the Hidden Death," he exclaimed. "Are you game for a midnight outing to test the theory?"

"Would a duck swim?" I answered, greatly flattered by the "we," though obviously I had done nothing to solve any mystery. As a matter of fact I did not understand how it had been solved. I certainly was in no way enlightened by his next remark.

"Well, away with you, and by hook or by crook secure a young goat or a lamb or a turkey or a goose, or any medium-sized animal. Take your car and meet me near the Colonel's house at midnight. Switch off your lights as you approach the common. Things should be fairly quiet by then, but the police will be watching and I don't want to have to explain my theory and perhaps be held up by red tape before I have tested it. I'll get the other things. Now be off with you, as I have a lot to do. I'll explain later."

Knowing Gartside, I did not waste any time in questions, but hurried off.

I don't know if any of you have ever tried to procure a young goat or a lamb or a turkey or a goose or any medium-sized animal in Cape Town after nine o'clock at night, but if you have you will sympathize with me in the job that had been set me. Eventually, about eleven o'clock, a coloured man told me that he knew a man at Maitland who had a goat that he might be willing to sell. Off I went posthaste to Maitland, and, after some difficulty, succeeded in finding the owner of the animal.

"Yes, I have a goat, Master, but it is a very good goat and I do not think I want to sell it, Master. What does Master want it for?" As I did not know myself, I could not tell him, but said it was for a friend. "It is a very

good goat, Master, and I don't think I want to sell it, Master. If Master can wait till tomorrow, I can get Master a very good goat, Master, from my brother who lives at Bellville, Master," and so on.

Eventually, by paying three times what the animal had been worth in its prime, I became the triumphant, but somewhat anxious, possessor of an aged and odoriferous ruminant, which seemed as reluctant to leave its master, as he pretended to be to part with it. At any rate it took the united efforts of its late owner and three other men he summoned to his assistance to induce the creature to take its place in the back of my car. Once inside, however, and the door closed, it resigned itself to the inevitable and commenced thoughtfully to devour the upholstery of the back seat. It was only then that I realized that Gartside had said a "young" goat, and fervently hoped that he did not want the brute for some rejuvenating stunt, with maybe the professor as the subject.

Anyhow, time was getting short, and I had to step on the gas to reach the rendezvous in time. Gartside was already there and approached the car as I pulled up.

"What did you get? A goat. Good. No, it's age doesn't matter if it can walk." I gave a sigh of relief, as I certainly did not want to have to go scouring the country again for another animal of more tender years and muscles. "Now to work, before we attract attention."

WHILST he was speaking he had been tying around the goat's neck a cord about thirty feet in length to the other end of which he securely knotted a large white handkerchief. Acting under his directions, I got the goat out of the car—luckily it pre-

ferred getting out to getting in—and chivvied it out to the common, wondering how long it would take me to deodorize my car. The animal wandered away slowly, stopping to crop the grass as it went.

Meanwhile Gartside was removing the rest of the things from his car. First came a double-barrelled, twelve bore shot-gun, which he loaded, cocked and handed to me with the order to keep a sharp lookout and to fire at once if I saw the need. Next two electric torches, one of which he handed to me, telling me to put it in a handy pocket.

I could understand the gun and the torches, but the rest of the paraphernalia frankly amazed me. A spade, an iron gas-cylinder with about twenty feet of rubber tubing, a slender iron rod some six feet long, a length of very stout wire netting of large mesh, a dozen tent pegs, two wooden mallets, and finally, of all things, a compact metal object that I recognized as a Mills' bomb. This last he handed to me, remarking that he had no need to tell me how to use it. He had not.

I forebore to question him, though, beyond the fact that I guessed that the goat was to act the part of a decoy, I was quite in the dark. I realized, however, that I was there to help and not to talk, and was content to await events in silence.

By this time the goat was well out on the common and grazing steadily onwards. Soon it disappeared in the thin mist that hung over the grass. Patiently we waited for what seemed hours, but which could not have been many minutes, twenty at the outside. Then from the gloom came a plaintive bleat, long-drawn and to my straining ears, startling.

Immediately Gartside snatched up the cylinder and the roll of netting.

"Quick, Parrott," he cried, "bring the rest of the things," and made off in the direction taken by the goat, with me close at his heels. Despite the thin mist we could see the ground dimly for a few yards all around, and so had no difficulty in noticing the white handkerchief when at last we came upon it, not far from the centre of the common.

"Good," exclaimed my companion, depositing his burden. "Keep the gun handy, but put down the other thing."

Where we stood we were somewhat off the golf fairway and the grass was of moderate growth. From the handkerchief the cord was just visible for a few feet; of the goat there was no sign.

"Broken," I said. "The goat must have had a bad fright and bolted, or been carried away."

"I think not," said Gartside. "See," and stooping, he seized the cord and pulled. To my utter amazement I perceived that the end ran straight down into the unbroken earth.

Taking out his torch and carefully shielding its rays, Gartside bent down and closely examined the ground all around the cord, in places smoothing back the grass. Then, with a grunt of what I took to be satisfaction, he rose to his feet and, bidding me keep the gun ready, fetched the spade and commenced to dig around the vanishing cord. Having dug a hole about a foot square and of the same depth, he started to probe along the course of the cord with the thin iron bar. This seemed to encounter but slight opposition, and a hole about an inch in diameter was speedily made.

CARRYING on with his still rather mystifying operations, into this hole he then pushed about three feet of the rubber tubing attached to the

iron cylinder, the tap of which he turned on.

"Chlorine," he explained laconically, as he turned off the tap a couple of minutes later. "We will give it five minutes. Help me to get the other things ready."

The cylinder was set aside and the roll of netting unrolled and spread out flat, the mallet and pegs being laid ready beside it.

"Time's up now," announced my friend. "Keep the gun ready." Then, returning to the small hole with the spade, he thrust it into the ground beside the aperture and pried upon it strongly, thrust again, and once more bore hard down on the blade and handle. As he did so I was astounded to see a circular piece about five feet in diameter of what had appeared to be solid earth rise up as if on a hinge.

Again adjuring me to be ready with the gun, Gartside bent down, thrust his hands into the slit that now showed at his feet, and, seizing the edge of this giant lid, with a powerful hoist flung it upward and clean over; at once leaping back from the cavity now revealed.

"Now the netting; quickly," he cried, and, divining his purpose, I lost no time in helping him to drag the wire meshwork across the top of the hole and peg it securely down all round.

"Now we will see what there is to see," he announced with a sigh of relief. "That was rather a ticklish job. Keep the light of the torch well down; we don't want anyone round here for a bit yet."

And what an amazing sight the light revealed. A well-like cylindrical shaft, five feet in diameter and at least twenty feet deep, the walls closely covered with a lining of yellowish fine-spun silk, as was the under surface

of the thrown-back lid. At the bottom lay the body of the goat, the cord still about its neck, and below it several dark objects, partly concealed by layers of the same silky stuff. Over all hung the reek of chlorine.

The astounding, almost unbelievable truth leapt to my mind.

"The murderer's lair, without doubt, but the brute has escaped."

"I think not," replied Gartside; and, after closely examining the walls of the pit, took up the iron bar and started to probe the sandy soil just beyond the silk-hinged lid.

"Here we are," he called out, as he started to work the bar to and fro. "Bring the cylinder again."

Knowing now his object, I did as he directed and, handing him the gun, thrust the tubing well into the hole he had made and turned on the gas. We had not long to wait. A scurrying, scratching sound, first just beneath our feet and then in the shaft, followed by a violent agitation of the wire-netting, and there, clear in the light of the torch which I flashed on the spot; stabbing furiously at the netting with six-inch dagger-like fangs, its eight eyes large as saucers and gleaming with a devilish malignancy, its hairy bloated body large as that of a bullock, appeared a creature such as might well haunt one's dreams for months to come.

By this time I had been prepared for something of the sort, but nothing approaching this demoniacal horror. The netting, stout as it was, would not long have withstood the monster's furious attack. Indeed it was already giving way, when, "Bang, bang," went both barrels of Gartside's gun and, with a shrill, fiendish screech, the nightmare creature dropped back into its den.

"Quick, Parrott, the bomb. It is only

wounded," cried Gartside, throwing himself flat on his face.

I have used dozens of the deadly missiles in Flanders and Picardy, but never more promptly than now. Even as I drew the pin and hurled the bomb into the pit, I flung myself to the ground not much behind my friend.

A deafening explosion, a screech strangled at its birth, and then on to our prostrate bodies, a shower of earth and stones, mingled with foul liquid abomination and fragments of repulsive, malodorous mush. Sergeant Davis and the others were avenged.

FOLLOWING the explosion, lights showed in most of the adjacent houses, and as we made our way back to the cars with such of our gear as remained, we met a small excited crowd including a sergeant and several constables, as well as old Colonel Gascoyne and Professor Culbertson, both attired in dressing-gowns. Drawing him to one side, in a few brief sentences Gartside explained what had happened, to the half-incredulous sergeant, who undertook to set a guard about the scene of operations till a full search for any scattered remains could be made.

"Now, Colonel, I'll have that whisky and soda, if your invitation is still open. This time I feel that I need it. You had better come too, Professor."

"... so you see," went on Gartside, as, after a wash and a stiff drink, we sat in the Colonel's study, "setting aside all consideration of the first three cases, the complete disappearance of Sergeant Davis and his assailant under the very noses of scores of police ruled out all the most obvious explanations, kidnapping, homicidal maniac, escaped lion, etc., even did not many other circumstances make such untenable.

"The only remaining hypotheses were either that some supernatural agency was afoot, or that this was the work of some person or animal that had the power of vanishing from sight and taking its victim with it. Thank you, Colonel, I will, but just a little more soda this time. The supernatural I absolutely refused to consider, and so concentrated on the second hypothesis, impossible as it seemed, unless it were that these visitations were the work of some animal at present unknown to science. This notion I was disposed to dismiss as incredible, none the less the idea remained at the back of my mind.

"Then came your demonstration of your Omega ray treated specimens, Professor, which by the way I advise you to destroy, when, I confess, I strongly suspected that you were pulling my leg. Then came the Colonel's withered creeper and his tale of someone, as he thought, running on all fours out on the common. Still, I confess that it was only when I saw for myself the amazing rate of growth of the scorpion that the astounding truth dawned upon me. My conversation with you, Professor, over the phone, convinced me that I was on the right track. There seemed no time to lose, if another tragedy was to be averted, so sending Parrott off to procure a goat or other animal to use as a decoy, I proceeded to collect the other articles I thought we should require."

Remembering the varied and unusual nature of these articles, I could not but marvel that he should have managed to procure them at that time of night; still, Gartside has many friends and enough influence to succeed where another man might try in vain.

My friend then briefly described the

subsequent proceedings down to the final denouement.

"Yes, yes," put in the old Colonel impatiently, "but what was the damned beast after all?"

"You ought to know," retorted Gartside. "You actually had it in your hands."

"I?" spluttered the other, evidently thinking that Gartside had taken leave of his senses.

"Yes, you," was the reply. "The creature responsible for all these inexplicable tragedies, and incidentally, I fear, for spoiling two perfectly good suits, was that bug, as you called it, that you threw away; the animal our friend here had treated with his Omega rays, thereby germinating in its body the power of unlimited growth; a *Stasimopus*, one of the most accomplished genera of trapdoor spiders."

"My God," gasped the Colonel, and with shaking hands helped himself to half a tumbler of neat spirit.

"Good gracious," ejaculated the Professor and made for the door.

"Yes, a gigantic trap-door spider, nocturnal like most of its kind, released on the common, constructing its hidden retreat, feeding first on the usual insect prey, then probably on frogs, mice and moles, then on cats and dogs; and gradually enlarging its lair as its size increased. This would never be noticed, as not only does the trap-door spider remove the soil it excavates with its jaws to a distance, but also carefully covers the perfectly fitting lid, made of earth bound together with silk, with natural vegetation in such a way as to make its nest one of the most wonderful instances of camouflage in the animal kingdom."

Here Gartside made a rough sketch of the creature's pit and side passage,

to explain our procedure with the gas cylinder. * * *

"SOME trap-door spiders," he explained, "are content with a simple pit closed by a hinged door on top. Others make an extra side passage up which to retreat in the event of the door being forced, say, by a predatory beetle. The acme of perfection in this respect is reached by the *Stasimopidae*, which close the entrance to this side passage by a silken door exactly matching the walls of the pit.

"It was into this passage that I drove the over-grown monster by the first dose of chlorine gas. Having netted in the pit, I then drove the beast out of its retreat by another whiff of gas. Knowledge of the design of the dens of this particular genus enabled me to plan and execute what I considered the most effective plan of campaign and so put an end to the creature's depredations for good."

"My God," gasped the Colonel again, mopping his brow. "And I let the brute loose."

"No need to reproach yourself for that," Gartside reassured him. "No one could possibly have conceived such a terrible result. Maybe, had the Pro-

fessor been a practical-minded man, he might have foreseen the logical outcome of his experiments; but perhaps it is unreasonable to expect that degree of forethought from a scientific genius. Fortunately we may conclude that the victims in all probability felt no pain. One stab of the poisoned fangs would produce almost instantaneous death, accounting of course for the entire absence of any blood or signs of a struggle.

"Fortunately this appears to be the only ray-treated animal unaccounted for, except for one *Holopterna alata*."

"What? Another man-eating horror?" cried the old man.

"No, just an ordinary stink-bug, that lives by sucking the juices of plants. I fancy you have already had a visit from it."

"My jasmine creeper," groaned the Colonel.

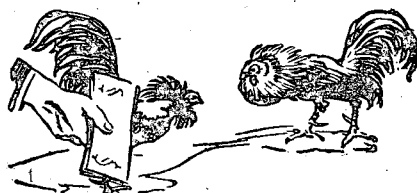
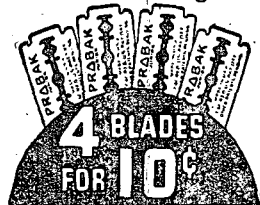
"Exactly. And now, Parrott, I think we had better be getting home, where I have still one small duty to perform."

"What is that?" I asked somewhat anxiously, feeling that we had done quite enough for one night.

"Just to follow an excellent example that I believe the Professor has already set us, and kill that scorpion."

THE END

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PROBAK JUNIOR

The Maelstrom of Atlantis

By JOSEPH WM. SKIDMORE

This story is charged with adventure and with exciting passages, more or less in line with Dr. Beebee in his bathysphere. Our readers will observe that a "depth globe" is the translation of the name given to the explorer's vessel. But Dr. Beebee did not get into Atlantis and is not likely to have the experiences encountered by the characters in this story.

Part I

CHAPTER 1

The Whirlpool of Death

MID-ATLANTIC and ten thousand feet high a small blue monoplane flashed through clear summer air.

The skillful hands of Don Calvert, scientist and adventurer, were at stick and throttle. His keen, bronze face lighted with affection as he turned for a moment to his co-pilot and navigator. Joane Cromwell removed a sextant from an exquisite brown eye and hastily scribbled a note. She thrust the message into Calvert's hand.

"All O. K., Don. Pull two points to starboard," the note read.

It was useless to speak above the roar of the Diesel engine whirling at four thousand revolutions per minute. Calvert nodded his helmeted head in approval. Adjusting a head set to ears that matched the fine eyes for beauty, Joane began to adjust the radio receiving and sending set.

Below, the mysterious gray Atlantic heaved its restless bosom—like an incredibly large animal breathing.

Don Calvert and Joane Cromwell were returning from Paris, where they

had spent the week-end. Speeding at four hundred miles per hour, their home—New York—was but a few hours away.

Suddenly the girl's beautiful face took on a slight frown as she made intricate adjustments on the radio dials. Then in sheer amazement she began shouting to Calvert. Sensing something was wrong, Don throttled the motor to a softer, humming threnody and nosed the plane over to retain flying speed.

"An S. O. S., Don! A ship calling for help!"

"What's its location?" asked Calvert, in excited tones.

Joane made a hasty calculation and after a moment stated excitedly, "Why, the ship is only about ten miles to the northeast!"

Snarling with sudden rage, the powerful motor again burst into roaring vibrant life, as the plane banked into the northeast. The flashing arc of the plane's propeller blade seemed to challenge the light rays of the blazing mid-day sun.

Now full-nosed over, the speed increased to five hundred miles an hour. The terrific acceleration was for a moment a source of physical discomfort.



"Start reeling us up at once," snapped Calvert into the mouthpiece of the telephone.

Calvert and Joane eagerly scanned the sea for the ship sending out the radio impulse of S. O. S.—the international call of distress. They were now only a thousand feet above the ocean.

"There she is, Don, about a mile to the right!"

"Tune them in again, Joane, and ask what their trouble is."

Calvert used the speaking-tube that he would be readily understood, but already Joane had readjusted her ear phones and was searching the ether with the tuning coils. Don Calvert half turned in the pilot's seat to gaze in amazement at the strange expression of incredulity slowly spreading over Joane's face as she listened to the message coming from the ship below.

"It's weird, Don! They're not sinking, and they're not a-fire. The captain says for God's sake to help. The ship is caught in some mysterious current or whirlpool that is whirling the boat with such irresistible force their engines are futile!"

Calvert throttled the motor and began to bank about in wide circles to watch the boat below. As the plane banked steeply, standing almost vertically, the two beheld a most astounding and gruesome catastrophe. They could now plainly see the ship below was being whirled with incredible speed in a seething circle with a circumference of about ten miles. As the two gazed with fearful wonder at the scene below, they were horror-stricken to see an immense portion of the sea whirling madly and swiftly; assuming the shape of an immense bowl. The unlucky ship, madly careening in that circle, was caught at the very periphery of the furious rotation and was slowly being drawn towards the center of the terrific maelstrom.

"Zeus!" exclaimed Calvert, through the speaking-tube, "a vortex—a mael-

strom! The poor devils are gone! And we can't help them."

THEN like a flash Don nosed the swift plane over and dived full speed toward the doomed vessel. In a moment they were within one hundred feet of the ocean's surface. With throttled motor Calvert ruddered the plane approximately above the vessel turning in its mad circle of death. While the two in the plane gazed in numbed horror, the center of the whirling bowl of water dropped away, to become a great, hollow, open funnel of madly whirling water.

Gradually the gallant vessel circled lower and lower into the mammoth rotating bowl. In a heart-stopping moment the boat was lost from sight.

Shaken by the sight of the catastrophe, Calvert leveled the plane to an even keel. They both gazed intently at the whirling vortex of water below. The wide, open shaft of water, now about one thousand feet in diameter, retained its shape, gyrating with vicious velocity.

"A maelstrom, Joane—a mighty maelstrom! The poor devils have gone to the bottom. There's nothing we can do. Radio all boats to keep away from this vicinity. God knows how long the whirlpool will last. We'll make all speed for home."

With that Calvert started a retracting gear that shortened the plane's wings. They slipped into the fuselage until the plane was more of a projectile than of a winged craft.

The little plane and its powerful engine seemed to share their anxiety; they darted away from that fearful scene at nearly the speed of sound waves.

Four hours later Calvert rolled his landing wheels on the tarmac* of a New York aviation field. Joane's radio news

* Tarmac, an abbreviation of "tar macadam," the surface used on the runways for starting and landing planes.

of the gruesome catastrophe had gone ahead. Officials and reporters met them as they stepped from the plane. Questions were asked, and soon newspapers over the entire world blazoned forth in great headlines the tragedy of the sea.

CHAPTER II

Audacious Plans

DON CALVERT, scientist and adventurer extraordinary, possessed wealth and resources. Government officials often called upon him for highly dangerous diplomatic work and international missions. Many times Calvert had flown into unexplored territory to solve mysteries that concerned the fate of nations.

He was now seated with several erudite persons in a secret government assembly room. Bearded and important gentlemen were gathered around the council table. From far and near they had come at Calvert's urgent call. Joane, always at her lover's side, was among those present. She invariably accompanied Calvert on his perilous adventures. She was an able aide—a trained flyer, navigator and huntress. Nervy and courageous; she had more than once assisted Calvert in highly dangerous situations.

Don and Joane had two loves—each other—and glorious adventures.

"I tell you, friends, it was a maelstrom. I would like to have Doctor Benson, the world's greatest authority on water currents, vortèxes and maelstroms, give us his opinion."

That bearded, learned Swedish scientist arose.

"My friends," he stated, "the only known maelstrom of which man has any authentic record is the ocean phenomenon that occurs recurrently in the waters between the southern end of the Island of Moskenes and a mighty rock called

Mosken, which is surrounded by treacherous reefs and rocks. Moskenes is one of the Lofoden Islands, and is situated off the northeastern coast of Norway, north of the Arctic Circle in the Frigid Zone. It was a tradition of the Vikings that has been authenticated in later years. The interpretation of the word 'maelstrom' is 'the current that grinds' or 'mill current'. There is, however, an explanation for this maelstrom or whirlpool of water, for the waters of the Arctic Ocean, on their way to the coast of Norway, are forced through the narrow Strait of Fjeldsund, between the Island of Hindo and the Island of Fjeld, the latter being separated from the mainland by a narrow strait. When the Arctic stream reaches the broad sound called the Vestfjord, it divides into two currents, one running along the coast of Norway and rejoining the ocean near the town of Bodo, the other running along the eastern shores of the Lofoden Islands.

"The second current turns round the southern end of Moskenes, which is the southernmost large island of the Lofoden group. Here it passes over many rocky reefs near water level, which makes it race angrily. Then it comes in collision with mighty tides from the ocean. This gives rise to the great whirlpool, the center of which is the rock of Svarvene, near the larger rock of Mosken. There are at times many whirlpools, but at the worst there is one great whirlpool. The racing water finally forms a great funnel-like shaft, such as Calvert describes.

"The famous Dr. Parmenter was a great student of these matters, and in nineteen hundred and twenty-nine gave to the world reliable information on these maelstroms."

"But," protested Joane, her face alight with eager interest, "there are no passes, straits or reefs near the surface in the

Atlantic where the ship went down. How can you account for such a maelstrom at that location?"

"Ah!" stated the Swedish student, "that, my dear young lady, is a question I cannot answer. Some mighty force we cannot comprehend actuated that whirlpool. Has any trace of the lost ship been found?"

"No," replied Calvert, "the government has had several destroyers searching the sea for four weeks. Not even a spar or a stick ever came to the surface, which has remained calm as a lake since the tragedy."

Calvert paused. His tense attitude indicated some forthcoming, portentous message. The group leaned eagerly forward, and Joane moved close to Don's side.

"Gentlemen," continued Calvert, "I have been studying this maelstrom mystery since the tragedy and have arrived at a most startling conclusion—that is, gentlemen, I mean, with the assistance of my talented fiancée, Joane Cromwell—"

"Well, what is it, Calvert?" interrupted Doctor Benson, who had no thought for sentiment, when scientific problems were to be solved.

"My friends; first of all, the maelstrom explains the puzzling problem of the large number of ships so mysteriously lost in the last two hundred years. Joane and I have checked the ships lost, and nearly all were in the vicinity of the maelstrom when last seen. And more strange, the disappearances of the ships show a sequence of dates indicating the maelstrom has occurred at regular intervals."

"Is that your remarkable deduction?" almost sneered Doctor Benson. "I thought you had something important enough to justify calling this meeting. I was conducting very important radium experiments when your message came."

"Wait, Doctor Benson!" cried Joane, springing to her feet. "You know Don too well to say that. Oh, I know your keen, scientific mind is impatient. Now get ready for a great surprise!" Then turning proudly to her adored Calvert, "Go on, Don, tell them!"

"You may think me crazy," went on Calvert, calmly and slowly, "but this maelstrom is the gateway—and the opening—to the Lost City of Atlantis."

"The Lost City of Atlantis!" cried Doctor Benson in surprise. Immediately the group was in a great uproar.

"Gentlemen, I'm not through yet. Joane and I are going down into that maelstrom and will visit the city of Atlantis. That vortex is recurrent. We have made careful plans; our equipment is now being assembled."

FOUR men dashed from the room; reporters anxious to get to their editors, for here was a great story—Don Calvert and Joane Cromwell, who had explored the sky, even beyond the stratosphere, were now going to the bottom of the Atlantic. The world would not doubt. The two had always accomplished the incredible. No—the world would wait and hope. The world would not have doubted if Calvert and Joane announced they were going to fly into Hades and bring back the hide of the three-headed dog, Cerberus.

When the group quieted, Calvert continued.

"First, my friends, I will tell you what the world—or rather a few scholars—know of the Lost City of Atlantis. Then I will describe my plan for reaching the bottom of the sea, which is seventeen thousand five hundred feet deep at that point."

"How will you overcome the pressure at such a depth?" interrupted Doctor Benson. "That depth will produce a pressure of over five hundred and sev-

enty tons per square foot. It is impossible."

"I will tell you later, my academic friend," smiled Calvert. "Now about Atlantis."

"In the British Museum there is a remarkable document known as the Troano manuscript which was written over thirty-five hundred years ago by the Mayas of Yucatan, containing an authentic account of the cataclysm which sank the continent of Atlantis. This wonderful document tells us that in the year six Kan, on the eleventh Mulac in the month Zac, there occurred terrible earthquakes, which continued without interruption until the thirteenth Chuen. The country of the hills of Mud, in the land of Mu, was sacrificed, being twice upheaved. It suddenly disappeared one night, after having been continually shaken by volcanic forces. Being confined, these caused the land to sink and rise several times and in various places. At last the surface gave way, and ten countries were torn asunder and scattered. Unable to stand the force of the convulsions, they sank with their sixty-four million people.*

"Before the Atlantean continent was submerged, the initiates of the Atlantean mysteries, carrying with them the secret doctrines entrusted to their keeping, migrated into Egypt and other parts of the earth, where they would be safe from the impending disaster. Thus the secret teaching was preserved. They established centers of learning in different countries.

"Finally, what had been a great continent sank slowly and inexorably into the Atlantic. It was the greatest tragedy known to mankind since the great glacial period wiped out a vast civilization millions of years ago.

"In the *Critias*, Plato describes in de-

* Author's note: Credit for the information about the Troano Manuscript is gratefully given to Manly P. Hall, author and lecturer.

tail the divine foundation of the Atlantean Empire; originally known as *Poseidonis*, from the Greek name of Neptune, and tells of the *Golden Age*, preserved in myth and legend, when the gods walked with me, and depicts the Zenith of Atlantean civilization. The Atlanteans were the demigods of the ancient world—"

Calvert, suddenly realizing his enthusiasm had led him into a lengthy, technical discourse, stopped for breath. His small audience was spellbound—all but the cynical Doctor Benson. That worthy gentleman, always practical, again interrupted in an impatient tone.

"Yes—yes, Calvert. We know about the traditional lore of Atlantis, but how are you going to reach the bottom of the sea?"

Joane smiled, for her keen ear had caught the note of anxious interest in the famous Swedish scientist's voice. She knew that the captious, bearded scholar had a heart full of love for humans—and for scientific adventure.

Calvert caught a shrewd wink from Joane and realized its import.

"I assure you, gentlemen, that we have planned and are having made a device that will withstand the terrific pressure and take us to the lost Atlantis," Don stated calmly. Then acting on a second surreptitious wink from his sweetheart's lovely eye, "Our only problem now is the selection of the third person—a man to accompany us. That man must be a scientist and brave as Theseus."

The group was silent. They knew a thousand men in the world would eagerly volunteer.

Then, as if actuated by a single impetus, each sprang forward. Doctor Benson was the first to find his voice, that was now strangely pleading.

"Calvert—and er—Miss Cromwell, I am the man who's going. My exper-

ience especially fits me for the chance. I'll risk your device, whatever it is."

Don and Joane had already decided on the old, lovable, canny scholar. They recognized his great knowledge and experience as valuable assets for the dangerous expedition.

CALVERT extended his hand in eloquent answer. Doctor Benson reached forward, and strong sinews of two right hands fairly crackled.

"Don—Calvert and Joane, I—I—love you for this. I have to go. And say, you two young rogues, I'm just as brave as you. I——"

Suddenly the technical, analytical brain dispelled the quick sentiment.

"Let's go over our plans. When do we start? Have you the plans here of the device? Tell me about them. I can help."

"Very well, my anxious comrade. One question at a time. Here is the plan of the vehicle in which we go to the sunken Atlantis."

As Calvert spread out a blue print, the bearded scientist fairly devoured it with eager eyes. In an incredibly short time he had absorbed the details of construction.

"Why, Calvert," shot out Doctor Benson, "it's a large sphere. Fine—the best possible shape to withstand the terrible pressures, but will it——? How can you——?"

A dozen rapid questions poured from the scientist's lips. His dark, deep-set eyes gleamed with the fire of a devotee.

"Wait, Doctor Benson," laughed Calvert. "One question at a time. Suppose you let me describe the device, and you make notes."

The Swedish scientist stroked his beard and nodded an eager assent.

"You can see, Doctor, it is to be an immense steel sphere. The spherical

construction, as you well know, is the best shape to withstand a uniform crushing pressure from the outside. The 'depth globe,' as we shall call it, is to be exactly twenty-five feet in diameter. That is the outside diameter."

Doctor Benson, unable to control his technical enthusiasm, started to interrupt. Joane caught his arm, and the scientist remained silent.

"The outer shell," continued Don smiling at the near interruption, "is twenty-four inches thick and is being fashioned from the toughest chromium steel; made with a special heat treatment to give the metal an unusual tensile strength. This twenty-four inch outer shell is constructed of three sections, laminated together with enormous pressure. The lamination insures greater strength and reduces the risk of weak spots in the metal.

THE inner shell is eighteen inches thick and is being constructed of the same steel and is also laminated. This inner shell is being strengthened against collapse by a series of specially designed tubular steel braces. These inside braces, being hollow, are to be utilized as compartments to store oxygen under pressure, one thousand pounds to the square inch. It is a well known fact that pressure created in a hollow tube up to its stress capacity increases the tube's resistance to compression, in a degree reinforces the shell. Every detail has been carefully studied and checked. It now remains for Doctor Benson to give the device a final inspection. It's going to be quite crowded for the three of us in the globe with food, tools, the tubes, instruments and miscellaneous items."

"Why the inner shell of steel?" demanded the cynic Benson. "That does not seem necessary. Why did you not plan to make the outer shell thicker?"

"Not so fast with questions," laughed Calvert. "Remember Joane and I have spent days calculating, assisted by my own engineers. Be patient. I will give you all the details."

"The depth globe is so constructed that the outer shell can revolve in any direction around the inner, or the inner can revolve within the outer."

"But why?" shot out the impetuous Benson.

Calvert gave no heed to the interruption and continued tersely.

"As you see, there is a six inch space between the outer and inner shells. This space is filled with eighteen hundred and forty-two steel balls that can rotate freely in a heavy oil. Thus the balls act as bearings and also take up the space between the two shells. Therefore the compression resistance of the depth globe is equal to the strength of the two shells. Inside the inner shell, where we three must be, there are two powerful gyroscopes set at right angles to each other. The gyroscopes make it possible to hold the inner shell in any desired position, even though the outer shell is rotating. Thus if the depth globe is caught in whirling currents, the inside globe can be kept stationary so that it will cause no discomfort to us."

"Fine—a great idea," burst out Doctor Benson, unable to restrain himself. "The device may resist the pressure, but how are you going to lower it? By cable?"

"Of course," stated Calvert. "The cable is to be fastened to the outer shell at a reinforced loop of steel, designed with a swivel joint so that the cable cannot twist. We will be able to communicate by phone with the ship that lowers us."

"What about power for the gyroscopes?" again broke in Doctor Benson.

"Energy for the gyroscopes is to be stored in special storage batteries. Elec-

trical energy is ideal for our purpose. The motors will deliver a steady power and will throw off no gas or odor. Of course we can store only a limited amount of energy in the batteries. We can run the gyroscopes for seventy-one hours. We can store oxygen for ninety-eight hours. So the trip must be finished within ninety-eight hours."

"Too bad," sighed Doctor Benson, "that I have not completed my experiments to perfect the storage of electric energy. I'm working on a method of storing electric energy by means of a catalyst or an electrolytic substance, wherein the energy lies dormant until released." The bearded Doctor's eyes gleamed. "The formula, as far as I've gone with my experiment, is like this—"

"Just a moment, my dear Doctor," interrupted Calvert. "Let me complete my description. The outer shell has a pair of small lenses that transmit images of the outside. These refractors can be lined up by revolving the inner shell so that a perfect view of the outside can be secured. Everything that Joane and I can think of has been built into the depth-globe. We, of course, have the utmost confidence in the great genius that is to be the third member of our expedition. I refer to you, Doctor Benson, the world's scientist. We are depending upon your technically trained mind to check every detail and calculate every stress. Joane and I have every confidence in you, who have already rendered such great services to mankind."

"I will take the plans to my laboratory and check your figures," cried Doctor Benson, ignoring the splendid compliments. "I need twenty-four hours. My entire staff will go to work on this matter."

"Thanks, Doctor Benson," exclaimed Calvert. "Take the blue prints. Meet us at the American Steel Plant Friday at ten A. M."

"Good day, gentlemen, and we thank you."

With that, Calvert and Joane departed.

CHAPTER III

At Sea

FOUR months later the United States Battleship, "California," was cruising the Atlantic. The after deck of that fine ship had been rebuilt with a giant windlass and swinging derrick boom. Upon a sturdy superstructure reposed an immense globe of shining steel.

The last four months had been very busy ones for Joane, Calvert, and the irrepressible Doctor Benson. The famous Doctor had worked night and day. The incredible trip had become an obsession with the academic scientist.

The entire world knew and waited hopefully. Calvert and Joane had long since flown into the hearts of the world's people. No adventure, however, seemingly hopeless, was deemed impossible for these two intrepid adventurers.

Many times on some incredible exploit, the two had held the earth breathless. Always they had flashed home with new fame and accomplishments to their credit.

Now, the two adventurers were going to the bottom of the sea, and the renowned scientist, Doctor Benson, was going with the expedition. The three most resourceful people in all the world were embarked on the most improbable adventure that imagination could conceive.

The fighting ship began to slow up and swing to starboard; now at the exact point where Joane and Calvert had witnessed the maelstrom.

Tomorrow, weather permitting, the three adventurers would enter the depth globe. The sliding, serrated doors would be closed, and the huge ball would be

lowered to the very bottom of the sea.

"Here is a chart of the bottom of the Atlantic," informed Calvert, as Doctor Benson and the fair Joane were seated on the after deck.

Calvert spread out a map on a small deck-table and guided a sharp pencil along the line indicating the depths of the Atlantic Ocean from Newport, Rhode Island, to the Rock of Gibraltar.

Joane and Doctor Benson leaned forward with the keenest of interest.

"This chart was furnished by the United States Government, and was compiled by the United States Destroyer *Stewart*. As you perhaps know, that ship is equipped with a sonic depth finder."

"What is that?" asked Joane.

Doctor Benson could not restrain himself.

"My dear child, the sonic depth finder is an ingenious apparatus that determines depth by the speed of sound in water. A sound impulse is sent out from a steel disc placed in the bottom of the vessel. This sound wave travels to the bottom of the ocean and is echoed back. The device measures in time the journey of the sound wave and of its echo, and thus the exact depth can be readily determined—"

"Yes," interrupted Calvert, "note that this chart shows that directly off the Atlantic coast from Newport, Rhode Island, the ocean bed dips practically straight down to a depth of two thousand seven hundred and fifty fathoms, or sixteen thousand five hundred feet. At that depth it underlies the ocean like a great plateau, until the vicinity of the Azores is reached. There," continued Calvert, his pencil indicating, "are the vast under-sea mountains, some lifting their peaks above the level of the ocean to form the islands of the Azores. It is my theory that those immense mountain ranges did, at one time, form the lost

continent of Atlantis. Note that continuing from the Azores, the ocean bed dips down to the lowest level, nineteen thousand two hundred feet, then rises to form the European continent. It is time man learned something of the bottom of the sea and its mysteries. Remember seventy-one percent of the world's surface is water, or about one hundred and forty-one million square miles.*

"YES," broke in Doctor Benson, "but they have found depths greater than nineteen thousand feet. There is a place in the Pacific called Swire Deep, six miles off of Mindanao Island in the Philippines, where the sonic apparatus recorded the terrific depth of thirty-two thousand and eighty-eight feet."

Calvert rose to his feet and gazed earnestly at his two companions. "I have a strange feeling the maelstrom will develop again within the next few days. I think it would be wise if we would make a test trip tomorrow and go down a mile to try out our depth globe."

"Fine!" exclaimed Joane, her eyes lighting. "We have been waiting four weeks now, figuring and checking every detail, and this monotony is becoming unbearable."

"Impetuous youth," shot out Doctor Benson. "What an impatient child. There is one thing that worries me a bit, and that is, when we've attained the depth of nineteen thousand feet that the pressure will become too great for our steel globe."

"We've checked the pressure time and time again," broke in Calvert, "and each time we find the ball will stand the pressure."

"Yes, it will, as to its tensile strength, but we are faced with the danger of the

water forcing its molecules through the steel. The chromium steel in the ball is made up of protons and electrons that have vast spaces between them in relation to their size, and when the pressure becomes so terrific, I believe the water will get through the steel itself. But there's no way to test that, and it's a risk that we'll have to take. Of course if we find that the two steel sections begin to sweat or percolate water, we can be raised on our giving the signal."

Doctor Benson's trepidation did not seem to extend to his interested comrades. Neither Joane nor Calvert gave the slightest attention to his fears. Now that the time for action had arrived, both were eager to start.

"It's agreed, then," said Calvert. "Tomorrow we start, and if everything is successful and goes well at a mile depth, let's proceed on down and see what we can find."

"It's agreed." With that, Doctor Benson reached out and clasped the hands of his two comrades.

"And now let's go to the Admiral's headquarters and arrange for tomorrow."

Chatting gaily and unconcernedly as though planning a picnic for the morrow, the three strode along the deck.

CHAPTER IV

Into the Depths

THE Battleship *California* moved a bit eastward over the calm, leaden surface of the Atlantic. Don Calvert was at the pilot's bridge and checked the position with infinite care. Doctor Benson and Joane were at his side.

"A most splendid day for our experiment," boomed out Doctor Benson. "The ocean is as smooth as a lake. No wind. Ideal day. It will be very easy for the ship to hold its position while lowering."

* Credit for figures and data for the profile map of the Atlantic Ocean bed is cheerfully given to *Popular Science Monthly*. This remarkable magazine published in May, 1923, the sonic depth findings of the United States Destroyer, "Stewart."

Calvert looked up. "Let's go!"

All preparations having previously been made with detailed care, the three bold adventurers were soon inside the huge metal globe. They had clambered in with some difficulty through the two narrow doors in each shell; the inside and outer shell having been previously aligned so the two doors were opposite. It was crowded within, and the three could not move about without touching each other.

Calvert switched on the electric lights and started the mechanism that actuated the doors. He was proud of those doors, and had spent many hours experimenting before they were developed. Sliding back into each shell, they were so constructed as to be entirely water-tight, and as strong as the main shells.

Calvert, seated at the control board with many switches and levers before him, tested both gyroscopes and made a check of the oxygen apparatus. They were already using oxygen from the stored quantity within the globe.

"Everything fine," informed Calvert. Then he rang the telephone connected with the Admiral on the battleship.

"We're O. K., Admiral. Everything fine. Swing out the boom and lower us slowly at first. I will keep in constant touch with you, so kindly keep your headpiece attached, so that I can talk to you every minute."

Calvert spent the next few moments intently studying the instruments and gauges before him. Doctor Benson and Joane assisted. While they had spent many hours within the confined space of the globe, they were still unaccustomed to the cramped quarters, and interfered with each other considerably.

"Lower away," ordered Calvert in the telephone.

The three waited tensely, their eyes fixed on the depth gauge. A fine, pre-

cise instrument that, for suddenly its needle quivered and registered a depth of ten feet.

"Why!" exclaimed Joane, "we didn't even know when we struck the water."

"Of course not," stated Doctor Benson. "We must relax as much as possible while being lowered. We will not use so much oxygen that way, and it will conserve our strength for an emergency."

"Yes," agreed Calvert, "and I will not start the gyroscopes unless it's necessary. Of course there may be some twist in the cable as it unreels, and perhaps we'll begin to revolve. In that event, I will hold the inner shell stationary."

Joane and Doctor Benson sat quietly watching the skillful fingers of Calvert manipulating levers and gauges, and listening to Calvert's part of the conversation with the Admiral of the battleship, now one thousand feet above.

"How's everything coming, Admiral? Slow up our descent a trifle. No trouble from pressure yet."

"Great Cosmos!" ejaculated Doctor Benson. "Why, look, Joane and Calvert! Three thousand feet, the lowest that man has ever been below the surface of the water!"

"Yes," agreed Don, "and the shells are holding wonderfully. Hold fast, now. I'm going to spin the inner shell slowly to see if the outer shell is pressing heavily against the steel bearings. If it turns freely it will prove the outer shell is holding against the strain."

"I don't feel anything. Are we turning?" asked Joane, after a moment.

"We're turning all right. Now I'll increase the speed until you can feel the centrifugal force."

With that Donald adjusted and moved a lever.

"There, Calvert. I feel the centrifugal force of our whirling. The inner shell is quite free."

But Donald did not hear. He was listening intently to some highly important message coming over the wire from the ship far above.

"Four thousand five hundred feet," broke in Doctor Benson excitedly. There was a ring of reverent wonder in his voice. "Think of it, my friends. Almost a mile below the surface of the ocean."

SUDDENLY Calvert started to his feet. Joane and Doctor Benson gazed at him in surprise, for upon the face of Calvert spread a look of startled amazement.

"What is it, Calvert? What's wrong?"

"Wait," ordered Calvert, "wait. I'm listening. Something's gone wrong with the ship above. Here comes news."

Their heads were in a little huddle as the two looked closely at Donald.

"Start reeling us up at once," snapped Calvert into the mouthpiece of the telephone. "Start your ship away from the danger zone very slowly."

"What is it, Don?" begged Joane.

EVIDENTLY the voice of the Admiral had finished speaking, for Donald rose to his tall height and looked squarely at his two companions.

"The Admiral reports to me that the maelstrom is beginning to form within a half mile of the ship. They are already being moved slowly in a large circle. We are in a highly dangerous position. If the ship waits to reel us up, all on board the ship may be lost. You heard me tell the Admiral to reel us in. Wait! Here comes more news!"

Doctor Benson and Joane did not speak. They knew their fate was in the hands of the gods. With the efficient Admiral above, and the resourceful Calvert at the phone, they knew they would be saved if possible. Then the tense, staccato words of Calvert rang out.

"Listen carefully, Admiral. Reel us in as fast as possible. You say the maelstrom is growing rapidly, and the ship is feeling the pull? Don't delay. Reel in swiftly I tell you. Never mind the risk of breaking the cable."

Calvert stopped speaking, and all eyes turned to the depth gauge. Four thousand feet, it read; then more swiftly it advanced till the quivering needle registered thirty-seven hundred feet. Again Calvert tensed, as a new and startling message came down over the wire. For a bit Calvert listened and then turned to his comrades.

"Joane—Doctor Benson—I've bad news. The Admiral says the ship is doomed. The maelstrom is growing with incredible speed, and the ship is now at the very edge. Because of the terrific drag of our depth globe, the ship cannot get away from the horrible current. It's just this, friends. If we were cut loose from the battleship, its crew of fourteen hundred men could be saved, but with us tied to them like an anchor, they are lost. It will take many minutes to reel us in, and then it will be too late."

Prompted by age-old, masculine instinct, both men turned to the girl. Without a break in her voice that courageous girl spoke.

"Order the Admiral to cut us loose, Don. Better for the three of us to die than for fourteen hundred souls."

"Bravely spoken, my lass!" exclaimed Doctor Benson. There was no fear in his eyes, no tremor in his voice.

Calvert's adoring glance conveyed his love and admiration to Joane as he began speaking into the mouthpiece.

"Admiral, we three have decided. You are to cut the cable immediately and steam out of the maelstrom with all power and speed. We order you to. Please!" pleaded Calvert. "There are hundreds of you and only three of us.

Hurry! Time is short! Act at once!"

Calvert stopped speaking and looked towards his companions. "It's no use. The brave admiral and his officers say they will go down with us. They will not cut the cable. They say the maelstrom is pulling them harder and harder. It's now a great bowl. There's only one thing to do. See this little lever behind this glass? I haven't told you of it. A pull on this lever, and our depth globe is instantly detached from the cable."

With a pair of pliers Calvert quickly broke the glass and placed his hand on the lever. Without any dramatics, he hooked his finger in the lever and asked in a quiet, restrained voice,

"Shall I pull it?"

With a smile on his face, the bearded Swedish scientist nodded assent.

Joane reached forward and placed her hand on Don's arm.

"I'll help you pull it."

Reaching over to clasp her hand, Calvert spoke quickly and distinctly into the mouthpiece.

"Admiral Richards, we have a way to disconnect the globe from the cable. I'm going to do it immediately. We are perhaps lost. Get away from the maelstrom with all the power you have. Circle with the current to gain speed, and pull always to the outside. Free from us, you can make it. Goodbye, Admiral!"

Calvert jerked the little lever!

CHAPTER V

Octopi Intelligentsia

FIVE thousand, six thousand, seven thousand, indicated the depth gauge. As the eyes of the three adventurers watched, it crept upward.

"We are not dropping as fast as I thought we would," commented Doctor Benson. "Of course the pressure is great at this depth from all sides, and

the globe, heavy as it is, takes considerable time to displace itself through the water as we go deeper."

"Do you really think we are lost?" There was an anxious note in Joane's voice, but no fear.

"Our chances are very, very small, Joane. I think we must make up our minds we are doomed." Calvert spoke calmly.

"Doctor Benson, will you make a chronicle of these last events. In case our globe is ever found, science can profit from our experiments."

The bearded scientist sat down and began making detailed notes in a fine, precise hand. He looked up once and grunted, "What if we are lost? It is a pleasure to die with two such splendid and brave comrades. When our oxygen runs out, we will of course die of strangulation. I have brought a drug that I will administer to each just before death. It will render us unconscious. That will save the last few horrible moments."

"Well," laughed Calvert, "while there's life, there's hope. Never mind the gruesome details."

Doctor Benson glanced in amazement at this youth who could laugh and joke in the presence of almost certain death.

"I feel the effects of centrifugal motion. We are revolving," cried Joane.

"Yes," exclaimed Calvert, watching his gauges, "we are revolving. We're whirling, and we're not sinking as rapidly."

The spinning motion became more apparent and with a definite sense of discomfort.

"Eight thousand feet," stated Calvert, as he started the two gyroscopes, for they were now struggling to hold their positions in the globe as it had turned over, causing them to have a tendency to slide towards the top. For the next few moments Calvert was busy manip-

ulating the controls of the gyroscopes until he had the inner shell stationary and in proper position.

"Folks," he almost shouted in excitement, "do you know what's happened? I'll tell you why we're whirling and why we're not sinking so fast. We're in the vortex of the maelstrom. We're being carried around and around. What do you think of that? We'll go down to the bottom of the sea in the open shaft of the maelstrom. Do you notice there's a centrifugal tendency always to that wall? That's because we're being whirled around in a big circle, the circle of the whirlpool."

For a few moments they forgot their terrible predicament to discuss this startling probability.

"You're right, Calvert," broke in Doctor Benson. "I hope the ship got away. I'm sure they did. That battleship has powerful engines. Too bad we didn't have room in this shell for radio apparatus. We're sinking faster now. See, the gauge has been reading ten thousand feet, nearly two miles! but not now."

"No trouble seems to have developed from water pressure on the depth globe," ventured Joane, hopefully.

"Of course not," shot out Doctor Benson. "If we are in the shaft of the maelstrom, being whirled around, we are not subject to water pressure at the present moment. Our depth gauge is actuated by barometric pressure, not from the pressure of the water on the shell. When the maelstrom stops whirling, the waters will close in about us, and then the water pressure will register upon the gauge."

Every attention and faculty of Calvert's was centered on the controls of the two gyroscopes to hold the inner shell stationary.

"We're nearly at the bottom of the sea," cried Calvert. "I believe we are

now in the open-shaft of the maelstrom. As we've whirled about its revolving shaft, each circle has lowered us deeper and deeper. I think——"

THERE was a sudden crash, and the three were dashed violently to the floor of the globe. Calvert struggled instantly to his feet and tried to reach the control board. There was another tremendous crash, and again they were dashed to the floor.

"Great Cosmos!" ejaculated Doctor Benson, "we're on the bottom of the ocean. We're being hurled about, striking rocks."

"Wait!" cried Calvert, who had reached the control board. "I don't believe we're revolving any more. See. I've stopped the gyroscopes. There's no centrifugal force!"

There was a slow, grinding noise below their feet, and the floor swung towards the top. They scrambled to regain their feet; the globe had inverted itself. With a struggle worthy of a trained acrobat Calvert reached the control board and manipulated the gyroscopes until they were on an even keel.

"I tell you, folks," he shouted, "we're on the bottom of the sea, and I don't believe there's any pressure of water against us. Hear that? That grating sound? I tell you we're rolling very slowly on the bottom of the sea. Wait! Do you notice those sounds have a sequence of occurrence in numerical precision as though some great lever were being used to push us along? What do you think, Doctor?"

"I don't know. I'm just listening. There. I believe you're right. Some force is being applied to us! Say, Calvert, align the two shells, so that the lenses will show us what's on the outside."

"Great Heavens!" ejaculated Calvert, "I never thought of that."

"Carefully, now. We may have to stand on our heads to align the lenses if the outer shell happens to be in the wrong position."

With shrewd manipulations of the gyroscopes, Calvert revolved the inner shell, watching a moving diagram before him. Another lever was pulled, and sections of each shell moved back, aligning small portholes of clear, tough, quartz glass, about seven inches in diameter. Then turning on a powerful searchlight that streamed through the lenses, Calvert fastened his eyes to the glass. Joane and Doctor Benson watched him closely, and they realized that Calvert's vision had registered some fearful sight when they observed his mouth fall open in sheer astonishment. Finally his eyes, shining with horrified amazement, turned to his two comrades.

"Zeus!" he exclaimed. "Look, Doctor Benson! We're on the bottom of the sea among rocks. There's no water, and we're being moved along towards an immense cave by fearful monsters."

"Let me look!" With that, Doctor Benson fastened his eyes to the glass. Calvert clasped Joane to his breast, as they stood watching Doctor Benson. That scientist began to speak distinctly and without apparent concern.

"Most interesting, my dear fellow adventurers. We're being moved along by monsters with steel-like levers, monsters of the sea, monsters with brains that reason. There are octopus people. Immense fellows. They weigh about a ton each. Great Scott! How clever they are with their strong tentacles. What an ideal form of life, gifted with intelligence. How prehensile, how strong their eight tentacles. Well, my friends, we shall name this race of octopus people of the Octopods. Great Heavens! They're moving us towards a great cave, with an immense, iron-like door. Do you know I believe we're being taken

into some subterranean cavern. Too bad I can't see any more. The outer shell has been rolled by them so that the glass lens is in the mud."

The great Swedish scientist sat down and looked at his friends.

"We are going to have the strangest adventure that has ever befallen man. We have a chance of coming through alive. We are being taken by these strange octopus people, who have reason and intelligence, into some great underground cavity."

Joane had not spoken for some time, but if the two men felt that she was over-awed by the strangeness of their predicament, their fears were soon dispelled, for she spoke softly and a bit cynically.

"Well, Don, I guess this is your lost city of Atlantis. Perhaps the people who originally inhabited Atlantis have become octopus-like people."

"We'll soon see," said Calvert. "There's nothing to do but wait until they get us inside, wherever they're going to take us."

THE three sat down and waited anxiously while the methodical, lurching movement of the great shell continued. Calvert rose to his feet and manipulated the lenses.

"I can see again," he burst out. "Great Scott! They've taken us through the great doorway. It's like steel, and the door is closing behind us. It's apparently a great, reinforced steel section, that looks as though it were many feet thick. Do you suppose they shut this door to keep the water out? Say, I wonder if when we landed on the floor of the ocean, the shaft of the whirlpool was still open, and these monsters came out and are rolling us into a cave that will exclude the water by reason of the heavy door. Wait! Here's another opening and another huge door. By

Jove! It's some large subterranean cavity, and these powerful doors, actuated by some powerful machinery, are to keep the water out. How many hours of oxygen have we left, Doctor Benson?"

"About nineteen hours."

"A lot can happen in that time," spoke up Joane."

The methodical, lurching movements continued, and from time to time Calvert would call out that another immense door was closing behind them. Finally the lurching movements ceased, and for a full half hour the three waited tensely. Unfortunately their quarters window was now resting on the bottom of the globe, and they could not see their surroundings. Suddenly there sounded against the outer shell of the ship a series of loud, metallic hammerings."

"There is a numerical sequence to those signals," exclaimed Calvert.

Tap-tap-tap-tap-tap-tap. Seven! Suddenly Calvert leaped to the nearest wall and with a hammer struck several resounding blows. Almost immediately the signal was answered from the outside, repeating exactly the number that Calvert had struck.

"What did I tell you?" shouted Doctor Benson. "Intelligent octopods! They're trying to signal us. Try one blow."

Clang! Calvert struck a mighty blow. Almost instantly it was returned from the outside.

"Well," stated Calvert, "there are intelligent monsters waiting outside for us. Let's buckle on our automatic revolvers and extra ammunition and go out among them. I have the feeling we are not in danger. Any beings that can reason as these monsters have, surely do not seek to harm us."

For the next few moments they gathered the articles and weapons they thought would be needed. It took Cal-

vert considerable time to align the doors so they could be opened. Finally this was accomplished by manipulating the inner shell.

"I'll open the outer door very slowly and only a little way," stated Calvert. "Then I'll open the inner door very slightly. This will give us two important tests. First, although we feel sure we are not under water pressure or submerged in water, the two doors slightly opened will soon tell us about that. Then, too, if there is breathable air in this cavern, it will rush in through the opening, and we can test it before going out."

They were anxious moments while the machinery actuated the two doors until they were slightly opened.

"No water," shot out Calvert. Slowly he opened the doors until they were fully retracted.

"And good air!" exclaimed Doctor Benson. "Feel how cool it is."

"I'll go through the door first," stated Calvert. "If I find everything safe, you will follow me, Doctor Benson, and then you, Joane."

Calvert quickly and boldly clambered through the opening in the shells. The two waiting within heard his body slide down the side of the globe. Then came a ringing voice.

"All right, Doctor Benson, and you, too, Joane, but come out ready to shoot if necessary, for we're in a veritable chamber of horrors."

In a trice three bold adventurers stood outside their steel depth-globe, and gazed bravely with staring eyes at the most fearful sight ever beheld by man.

CHAPTER VI

A Chamber of Horrors

DOCTOR BENSON, always the academic, curious scientist, no matter how great the peril of

any situation, was the first to find his voice.

"Octopods!" he gasped. "Great Scott, Calvert, look at their enormous size! Mammoth specimens, typical Genus of Cephalopods, of the order Octopoda."

Joane had moved instinctively to the side of Calvert, who placed a reassuring and protective arm about her shoulders. Calvert spoke no word, but gazed with swiftly appraising eyes at the horrible scene before him. A trained and experienced adventurer, his first thought was a survey of his surroundings; a methodical appraisal of the present danger.

They were in a cavern with a ceiling that appeared to be two hundred feet in height. Numerous openings gaped ominously around the walls. They no doubt led to other caves. The floor of the cavern itself was a large pool of water. Around the edges of the pool was a level area, like a walk, about fifty feet wide. The pool was a gruesome mystery of weaving bodies and remitted light—a shining, mysterious light.

"Great Scott!" muttered the erudite Doctor Benson, "that light is phosphorescent. Phosphorescence, my friends, is created by countless billions of tiny insects that inhabit ocean water. These minute organisms give off, especially when excited or agitated, a glowing light. They are of the Cystoflagellata family; an order of Mastigophora Lep-todisous. A genus of marine flagellate protozoans."

Joane suddenly found her voice.

"Look, Don!" she cried. Her voice was excited, but unafraid.

The others turned, and to their left they beheld an amazing spectacle. A great column of rock with throne-like architecture, apparently shaped by human hands and intelligence, rose upward to the height of some twenty feet. Re-

posing or sprawled upon the top of that pedestal was a mammoth octopus, with cruel, staring eyes that gleamed balefully. It was a shocking sight, but Joane, ever the student of mythological tradition, was the first to make calm comment.

"Boys, I believe we are in Hades. That huge fellow must be the one Virgil described—in Aeneas at the gates of Hell."

"Well, I don't know," commented Doctor Benson, with sarcasm in his voice. "He looks more like Briareus to me, with the fabled hundred hands. At least he has eight tentacles, that he seems to move about with great dexterity."

The feminine caution of Joane asserted itself.

"Do you think we had better retreat into the depth globe? Perhaps they may attack us. Look! The pool is filled with hundreds of them."

"I don't think so," replied Calvert calmly. "We're at the mercy of these brutes in any case. They certainly showed logic and reasoning when they rolled our depth globe into this cavern, and especially when they operated the immense doors that must hold the ocean from running in. Somehow I feel we are not in any immediate danger. I tell you, these Octopods have a human intelligence! Let's wait a while and stand our ground to see what happens."

Prompted by the instinct of humans to group together for protection, an instinct existing ever since the birth of time, the three stood closely grouped. Their automatic pistols were in tense but steady hands. It seemed that all the baleful eyes gleaming from the pool conveyed a certain appraising intelligence.

"If these Octopods have intelligence, what a strange form of life," mused Calvert.

The irrepressible Doctor Benson could not restrain such an opportunity to contradict; he loved argumentation.

"I SHOULD not say it is a strange thing," stated the scientist. "The first race to inhabit the surface of the earth has been called the Cro-Magnons, but in reality the Cro-Magnons were late comers. Their bones, implements and drawings, found in elevated and mountainous regions, prove that their existence commenced after those mountains were raised. Bones of man and his handiwork are found in the gravel beds of the waters caused by the Last Magnetic Cataclysm. This Cataclysm occurred long before the mountains in France and Southern Europe were raised. Of course the bones of these humans, found in these beds, lived ages before the Cro-Magnons. Civilizations on earth have lived and died, some greater than ours—perhaps some strange forms of civilization, animal like, reptile- or fish-like such as these Cephalopods. Who knows what strange races have lived and died? The history of man has been a series of destruction of race after race, arising again and again, to be wiped out by some cataclysm of nature. Why, the ancient remains of Egypt are but as yesterday in the history of man. The relics of Yucatan go but a date further back than the days of Egypt. The buried cities of Nivens date a step further backward. In some of the Hamalayan Monasteries, writings purporting to be seventy-five thousand years old are to be seen. Some of these manuscripts are dated back two hundred thousand to two hundred and seventy thousand years. Perhaps when the world was all water, such creatures as these before us, ruled an aqueous world."

Don and Joane had made no effort to stop the voluble Doctor Benson, but

it is doubtful if they absorbed all of the technical information the learned Swedish scientist had divulged.

The Argus eyes of the octopus on the pedestal seemed to have an uncanny influence over Joane. She had been gazing intently at the ghastly creature.

"Look!" she cried. "He waves his tentacles at the others. He is their king. He is giving them some sort of signals."

"Great Scott! I believe you're right," from Calvert, in tense tones. "The beast is moving his tentacles in a manner that has an intelligent significance."

"Look!" cried Joane. "They are moving from the water. They are coming towards us."

"You are right," agreed Doctor Benson. "Note that the water throws out more light as it is agitated. I must find out about this mysterious light. See how it is reflected from the walls. A perfect lighting system!"

In spite of the approaching horrors, Doctor Benson coolly walked over to the nearest wall and began to examine the hard, igneous rock with great interest. The rock was coated with some phosphorescent or radium-like covering.

"The king, himself, is coming down from his throne!" cried Joane, shrinking closer to Calvert.

Her sharp cry brought the curious Doctor Benson to join them. With incredible smoothness, the leathery horrors from the sparkling water moved to the edge of the pool. Like giant, uncanny protoplasms, each evil, tentacled body slid slowly and relentlessly out of the water over the level stone in front of the three adventurers. Like trained soldiers the devil-fish lined up four rows deep, and still there were many more in the pool.

"Look!" exclaimed Calvert. "There are more coming in from the other entrances to this cavern."

"I have made a very interesting observation about these creatures," stated Doctor Benson. "Every so often one of them drops back into the pool. Apparently they cannot live for too great a period out of the water. In that respect, at least, they are like the Octopods that we know."

"Apparently," began Calvert in measured tones, "the big fellow on the throne is the master. While their eyes stare at us unflinchingly, I yet have the feeling they are greatly amazed. They seem to be studying us. I am going to try an experiment."

WITH that Don stepped forward from the two a short distance towards the octopus on the throne. The young adventurer slowly raised both arms above his head and lowered them. He repeated this act three times. Solemnly and with unflinching, staring orbs, the immense octopus on the stone pedestal repeated the signal with two of his tentacles.

"There!" exclaimed Calvert. "He has intelligence."

Again he tried a signal, which was imitated by the octopus with numerical precision.

"That settles it," said Doctor Benson. "I believe we are quite safe. They do have intelligence. Let's try to communicate by signals."

Calvert with a stentorian shout set echoes ringing back and forth and the air vibrating intensely.

"Hello. We are friends."

The three stared with hopeful eyes, but nothing happened, except that the octopods gazed the more intently and fixedly.

Suddenly the great octopus on top of the column began to move. Noiselessly, his immense, tentacled body slid from the pinnacle of rock. It advanced slowly towards the three adventurers!

"Stand your ground," ordered Calvert, raising his pistol to fire. The octopus stopped a few feet from them, and its horned beak began to clash strongly and give out a series of vibrations. These vibrations were strangely shrill and had a certain rhythm of tone.

"He is communicating with the others!" cried Calvert.

From the darkness in the rear of the throne-like rock, a smaller octopus slid up to the king with incredible speed, and their tentacles touched swiftly. The smaller octopus immediately retreated.

Then a most amazing thing occurred—but a comforting occurrence. The giant octopus slid forward a few feet, and one long, leathery tentacle stretched out. The tapered tentacle was covered with two rows of vicious, suction cups. At the extreme end, where it tapered into a whip, it clutched a fish about two feet long. The loathsome tentacle stretched out until the fish was within a foot of Calvert.

"He is offering us food, a gesture of friendship—a peace offering."

Calvert stepped bravely forward and took the fish from the tentacle. He felt he must make some recognition of the favor, and he bowed a bit from the waist, making an extravagant movement with his hands to indicate gratitude. Had the situation not been so dangerous, Joane and Doctor Benson would have laughed at Calvert's obsequiousness.

"If only they would stop staring with those awful eyes." Joane's voice was a bit tired.

"Don't worry, dear," soothed Calvert. "They have intelligence. We are in no danger. We will work out some sort of a code and converse with them. Great Scott! Look, the king is beckoning to us!"

The king octopus had begun to slowly move away, his eyes turned rearward to stare at them. He held aloft one long

tentacle, making a weird, beckoning movement.

"He is beckoning us to follow," said Doctor Benson.

The three thought longingly of the depth globe.

"Shall we follow?" asked Calvert, turning to the other two. "Lord knows what strange adventure is before us. What do you say, Joane?"

Joane gulped a bit and simply said, "Let's go!"

A strange procession slithered along the smooth pathway—a giant octopus creeping along at walking speed, and a brave little group of three humans lost in a grotesque world of tentacled monsters. In the rear hundreds of smaller octopods slithered along like a mighty wave, silently, with eyes that gleamed—staringly.

CHAPTER VII

The Banquet Room

"**S**TRANGE things, these squids," mused Calvert, as they walked along in the odd procession. Directly they were guided by the mammoth octopus in front of them, through an arched doorway carved from the solid rock. It was like walking into some vast amphitheater.

The cavern they had entered was of the same shape as the one they had left, except it was much larger. Countless lights gleamed in the distance; either some sort of lighting system or the eyes of myriads of octopods. In the center were several pools of water, connected by a series of canals. The cavern was better lighted than the first. The three adventurers made a careful scrutiny of their surroundings as they moved along.

"Yes," stated Doctor Benson, who had apparently taken time for contemplation. "The octopus is of the Molluscan group. There are fifty thousand

distinct species of Molluscs. Because of the sucking discs located on their tentacles, they can go up or down smooth surfaces like a fly. Their senses of hearing and sight are keenly developed. Since the beginning of time, the octopods lived in the depths of the sea. Thus it is that evolution has developed their eyes to such an extent; the large pupils being able to absorb a large area of light rays. Specimens of the Tasmanian squid, or cuttle fish, have been found over forty feet in length. In the water when they wish to move rapidly, they have a most unusual method of locomotion—an organ like a funnel or siphuncle. This is a membranous tube connected with the capacious gills. By ejecting water through this tube, the creature can move rapidly through the water, but in a retreating fashion similar to the crayfish, a sort of rocket motion. Sometimes when frightened they emit an inky cloud of black fluid. Chemically this fluid is the sepia of commerce."

Suddenly the Swedish scientist stopped and glanced about. Something unusual had attracted his attention.

"By Jove, Calvert, do you know I believe this cavern, where we are now, is one of their breeding places. See, there are many small octopods in the separate pools. I am now quite convinced that these octopods have well advanced powers of reasoning. I wonder if—"

"Say, Doctor," suddenly interrupted Calvert, "I believe they are going to take us through this corridor."

While the irrepressible Doctor Benson had been discoursing and giving out his technical information, they had progressed nearly three quarters of a mile around the circular walkway that appeared to surround the group of pools.

Don and Joane well knew the peculiarities of the brave and intelligent

Swedish scientist. They realized that, while the learned mind was studying such a flood of scientific data, the active brain was analyzing the present danger. They had been in critical situations before, with the resourceful and redundant scientist. They knew he was as brave as Horatius at the bridge, and as verbose as Demosthenes.

Without any warning, there was a swishing sound over their heads, and a great, black shape swept by within a few feet.

"It's a bat of incredible size!" cried Calvert. "Why, that flying creature must have been eight feet across! I believe he will attack us."

"Well," grunted Doctor Benson, who always had a bit of humor for every situation, "we've met the king of the devil-fish, and perhaps our winged visitor is Camazotz, the Lord of the Bats."

"Watch," warned Calvert, keeping his glance fastened on the flying creature. "It's banking like an airplane. Look out! It's coming back!"

The winged mammal with glaring eyes swooped directly towards them. Its huge mouth was wide apart to show gleaming, curved fangs.

"Down!" yelled Calvert.

JOANE and Doctor Benson threw themselves to the hard floor of the cavern, but Calvert stood his ground, and as the creature came charging with clacking wings, Calvert, a splendid marksman and accustomed to lining machine gun sights with figures moving at high velocities, emptied his forty-five automatic. Eight leaden slugs ripped and exploded through the repulsive body of the flying reptile. It crashed against the wall of the cavern with a dull, sickening thud.

Instantly there was a great uproar of gnashing beaks with rapid movements among the octopods. The three adven-

turers noted with interest that all the octopods were gazing intently at the dead figure of the bat.

"I think we've impressed them with our power," said Calvert, hastily reloading his pistol with a fresh clip. "The roar of my gun seemed to disconcert them."

Finally the great octopus king slithered his body around, and the procession continued.

"Look behind us," urged Doctor Benson. "The other octopods are keeping further away from us. Evidently they have a great respect for us since you so skillfully brought down that flying demon."

"Keep a watchful eye for other bats," warned Calvert. "A flying fury that large could almost carry one of us away, and certainly it would tear us badly with those long fangs."

They could now see they were being escorted into a much smaller cavern. In this cavern was a single pool about two hundred feet across. Instantly all of the octopods, except the leader, slipped silently into the water. The King of Cephalopods weaved his body up to a platform of rock that stood about a foot above the level of the floor.

"Something's going to happen," whispered Joane, moving closer to Calvert.

"Look!" cried Doctor Benson. "Do you notice the water in this pool is only about a foot deep? The upper parts of the creatures show very plainly. I notice their eyes are not staring towards us. They are all looking towards that side-door. They are expecting something."

Donald and Joane turned their heads and noticed that the scientist's observation was correct. Even the king himself was gazing towards that doorway.

Joane uttered a cry of startled amazement. Through the foreboding doorway came a small group of figures that resembled humans. Their bodies were

squat and ill-shaped—long, ungainly arms touched the floor as they scuttled along. Ape-like heads, yet with human features and expressions.

"Humans!" breathed Doctor Benson. "By the Great Cosmos, they are humans!"

The pathetic group of grotesque half-humans are being herded into the room by a large number of octopods that followed closely, now and then striking a wretched laggard with a whip-like tentacle. Cleverly the octopods herded and shoved the miserable group of human figures until they were within reach of the octopus king.

"What are they going to do?"

"I don't know, Joane. Stand your ground."

The question was answered in a most horrible and startling manner. The king octopus suddenly whipped out a tentacle and grasped an unfortunate human. The struggling body was lifted high in the air, screaming like a mad person. With a movement like a rattlesnake striking, the figure was whipped into the huge, parrot-like beak of the King of Octopoda.

"Gods!" gasped Doctor Benson. "This is their banquet room, and they are going to feast on these humans."

"Look!" shouted Calvert. "They are going to push the poor wretches into the water, where the other devil-fish can eat them."

Humans have always banded together for mutual protection. Since they slithered as protoplasm from thermal swamps and evolved into man-like figures, they have grouped together and fought against their common enemies. The three brave adventurers reverted to type. Humans were being sacrificed to feed loathsome beasts!

"Fire!" shouted Calvert. "Make each shot count, and shoot at each eye of every octopus!"

Powder smoke and reverberating echoes filled the cavern of horrors as the three intrepid adventurers stood side by side aiming, loading, and firing with amazing rapidity. The three were super-marksmen!

CHAPTER VIII

Atla Leads Upward

THE three adventurers continued to fire quickly and accurately, all the while retreating in an orderly fashion. Some instinct prompted them to move towards the space globe—that meant a temporary safety at least.

"Not too fast," shouted Calvert. "Save your ammunition. Keep aiming at their eyes."

With each shot from the trained marksmen, an eye would blink out. The cavern echoed and roared with the thunder of the explosions, but in spite of the tumult, the three could hear a great threshing about in the water. Evidently the octopods, blinded and wounded, were struggling together in mortal combat.

With the first fusillade Calvert had directed his own skill at the king of the octopods. With his first two shots the immense devil-fish's two eyes blinked out, to become horrible, pulpy masses, streaming down over its repulsive body. The mighty octopus had immediately slithered from its throne and was tumbling in weird convolutions about the stone floor. One of its long, writhing, slashing tentacles encircled another blinded octopus, and the two instantly became a twisting, struggling ball of tentacles. From that horrible mass came the gruesome sound of gnashing, tearing beaks. The creatures were locked in mortal combat. A third was drawn into the conflict, a fourth, and more.

The little band of half-humans had grouped together, but the flopping,

writhing, blinded octopods would now and then blunder into their pathetic group, and two and sometimes three would be crushed by the infuriated and pain-maddened creatures. Finally the horrible mass of twisting, rolling creatures that encircled the king of the octopods floundered among the half-humans, and in a trice there were only four of the weird people not entangled by some life-taking tentacle.

"We can't save them!" cried Joane, her voice a prayer. "They're doomed. If they only had sense enough to run to us."

It was as though her spoken prayer was answered. From that hopeless group floundered one human-like figure, taller than the others. The little intelligence possessed by the creature seemed to tell it to rush to the god-like people defending them.

Brave as they were, the three adventurers started back in dismayed repulsion, as the human-like figure slouched towards them with an uncanny shuffling, but rapid method of locomotion. Its body was squat, toad-like. Its feet were long with prehensile toes. In the dim light Calvert fancied the toes were webbed. The hide of the creature was smooth and black in color. The torso was short with enormous, bulging abdomen. The head was like that of an anthropoid, the terrified eyes deeply socketed and set close together. But strangest of all, the body, including the head, was absolutely devoid of hair.

Gibbering strange, ape-like noises that were meaningless to the three, the grotesque human indicated some degree of intelligence, when it fell at Calvert's feet and placed its tentacle-like arms tightly around Calvert's knees. There it moaned piteously and horribly, pulling forth puppy-like sounds, broken now and then with guttural gibberish. The

body of the strange human gave off a fish-like odor.

"Some strange denizen of the underworld," grunted Doctor Benson, between careful shots directed at some shining eye. "Observe the large pupils of its eyes. Evolution has produced the large pupil to gather more light rays. No hair. Hair has been produced by man to protect him from the wind and the sun. No need for hair here. "There!" the scientist suddenly ejaculated, "I stopped that big fellow! What shall we do, Calvert?" My ammunition is nearly gone."

The scientist stopped firing and bent down closely to listen carefully to the guttural sounds coming from the lips of the human-like creature.

"Stop firing," ordered the scientist in a tense voice. "I believe I can make out what he is saying, or at least a part of it."

Joane and Calvert ceased their firing, but both maintained a watchful vigilance for any octopus that might venture dangerously close.

"How many cartridges have you, Joane?"

"Eight or ten," answered that plucky girl after a hasty count.

"Save three!" ordered Calvert, in a grim, portentous tone.

Joane did not reply. She knew that the last three cartridges would be for themselves.

"I've got two dozen rounds left. Say, Doctor Benson," exclaimed Calvert hastily, "the octopods are retreating. Those not wounded or blinded are floundering away into the other cavern. But say, that cuts off our route to the depth globe!"

DOCTOR BENSON did not reply. He was kneeling by the side of the strange human. The scientist was straining every faculty to understand

what the creature was saying. For many moments they held a fixed attitude, Joane and Calvert watching with incredulous wonder. The Swedish scholar seemed to project his mind into a world of the past. The toad-like figure of the human clung tightly to Calvert's leg and continued to mouth syllables.

"Great Cosmos!" finally blurted Doctor Benson. "I can make out a few words. My friends, it's incredible! This human, with the intellect of but a babe, is uttering words in the ancient tongue of the Atlanteans. We are truly in the lost land of Atlantis."

"What is he saying? What words can you make out? We can't stay here long. I fancy the octopods will organize and attack us. We can't hold them off after our ammunition is exhausted."

But Doctor Benson did not hear. He was calling upon the reserves of his trained mind to analyze the syllables. Calvert and Joane could hardly restrain their impatience, but something prompted them to remain silent—and not to disturb the scientist.

"I've got it!" shouted Doctor Benson. "This chap keeps repeating, 'the upper places! the upper places! Follow, follow!' Great Cosmos! He is trying to tell us to follow him."

Calvert and Joane were accustomed to strange and incredible happenings, but their amazement knew no bounds as they saw the dignified and erudite Doctor Benson crouch on his hands and knees before the grotesque half-human and pour from his bearded lips strange, guttural words. After what seemed hours, the scientist straightened up, triumph shining from his eyes.

"This chap says to follow him to the upper places. I've told him to lead us."

Silently the three looked at each other. Already, on this desperate adventure, they had adopted the policy of unanimously deciding on any perilous issue.

Without a word the three nodded. It meant they had instantly decided to follow the creature of the underworld.

Doctor Benson uttered some words that appeared to temporarily allay the fears of the creature. Calvert had for some time been looking towards the horrible spot where the little band of humans had been gathered for the feast of the octopods.

"They're all gone," he muttered. "This fellow is the only one left."

With a gesture that was amazingly ape-like, the creature reached up and grasped the hand of Doctor Benson. It strained forward.

"He is trying to lead us. Let's go!"

There was hope and eagerness in the scientist's voice.

"And his name shall be Atla, as he is the first Atlantean we have met socially."

Calvert laughed a bit strainedly at the courageous Joane's humor.

"Atla it shall be," he chuckled. "Lead on, Atla!"

CHAPTER IX

Caves of Peril

FEAR is the oldest of human emotions. Fear, among primitive man, was born from the mighty instinct of self-preservation—the mysterious urge to survive against seemingly insurmountable odds.

What mighty force—what overwhelming instinct ever dominates man to struggle?—always upward?

Calvert, Joane and Doctor Benson were fearful—not in any sense a blind, unreasoning panic; but a cautious realization of their desperate situation. Each of the three courageous minds was carefully analyzing every possible chance and theory that concerned their personal safety.

Doctor Benson possessed the least

trepidation. His was the scientist's mind. A new discovery, or a theory proved, was more important than life. To him death was but a scientific test of a theory. To the dashing, gallant Don Calvert, death was an adventure, but his heart was filled with fear for his loved Joane. Danger for her was a dreaded horror to Don.

To Joane life was sweet—precious indeed. Spartan she was; of heroic mould—and what mattered the outcome so long as Don stood by her side?

It is well for human progress that a few great, adventurous souls, like our three travelers, have always dared to risk the unknown. The history of man is a narration of heroism and suffering. The first human, vested only with a faintly glimmering intelligence and a broken branch, battled bravely to exist—to survive.

"Dowb, first of all his race, met the mammoth, face to face."

—Kipling

Hands have hissed in Tuscan fires; men have died on horrible battlefields, their lips grey with agony. Socrates, drinking the hemlock, without fear of death, and pitying his murderers—Archimedes, brutally slain by a soldier as he patiently labored at one of his problems—Columbus, pleading with a gallant queen, who gave the jewels from her imperial bosom—Joan of Arc, dying bravely for a worthless king.

The world can well give gratitude for such as these—who had the courage of their convictions.

Of such glorious ilk were the three adventurers. There was at hand a hazardous problem to be solved. They walked cautiously but bravely ahead through semi-opaque corridors and large, domed rooms.

Doctor Benson was slightly in the

lead. His right hand grasped the animal-like Atla, who scuffed along with astounding speed and endurance. The half-human constantly gave out squeals and grunts—like a happy simian.

The creature seemed to know it was with friends; three wonderful beings who could blast out death from their pointed fingers. Perhaps its poor, frightened brain reasoned the god-like humans were saviors.

Calvert, ever a vigilant campaigner, kept a watchful eye to the rear.

"I don't believe the octopods are following us."

The group was now at least a half-mile from the horrible banquet room. The tortuous trail through long corridors and domed rooms climbed steeply.

"Don't be too certain," warned Doctor Benson. "These octopods have reasoning power. No doubt they will organize and pursue us."

By now the three felt certain that Atla knew where he was going. His shuffling gait carried him unerringly through dimly lighted caves and mysterious passages.

There was a heavy dampness in the air, and the sickening, pungent odor was becoming overwhelming. They had not sighted a single octopus since leaving the domed cave of the battle.

"It's too bad we didn't have time to obtain a few supplies from the depth globe."

"We would have been trapped in the globe," replied Calvert. "I believe Atla knows where he's going. Can you make out what he's chattering about?"

"His sentences are broken. I catch words that tell of a city and people. Our guide is suffering from panic."

WITH an eerie scream Atla suddenly sprang backward toward Calvert. The underground man's eyes were dilated with terror. Chattering in-

sanelly, he pointed ahead with a shaking hand. The three adventurers looked ahead. At first they could see nothing, but soon Calvert's sharper eyes made out the blurred outline of an immense creature.

It was approaching! Now its two vicious eyes were glaring malevolently. Suddenly they could see plainly the approaching horror.

A mammoth rat! Large as a lion!

"Great Cosmos!" breathed Doctor Benson. "A rodent, a gigantic specimen of the genus *Mus*."

"Fire!" shouted Calvert. "It's going to attack us!"

With a panther-like leap the incredible rodent launched itself through space as if catapulted.

A veritable stream of lead from three smoking forty-five automatics poured into the vicious brain of the rodent.

"What astonishing tenacity of life," commented Doctor Benson nonchalantly as the enormous rat crashed in a lifeless mass at their very feet.

"Lead on, Atla!"

Doctor Benson, for whom the strange, underground half-human had developed a dog-like affection, had great difficulty persuading Atla to pass the dead rodent.

Joane had not spoken during the short battle with the rat. Calvert glanced closely to observe she was trembling a bit. For once his courageous sweetheart was shaken.

Woman has an instinctive, inherited fear of all rodents. This traditional fear has come down through the history of man. In the early caves of primitive man, the storage of food meant existence against severe winters. Rodents, the sneak thieves, have always infested human abodes to exist on man's supplies. Thus woman, whose lot was to stay at home and guard the larder, has always warred with rodents.

Later in the history of man, rodents

played a gruesome part in the spreading of diseases, especially the bubonic plague. Rats will follow man into the hell-trenches of war.

"Buck up, Joane, dear," soothed Don, drawing her close.

Joane did not reply; she was weary from the long strain.

Now and then Calvert pointed his flashlight ahead to light up strange scenes. There were long, climbing corridors, hewn from solid, igneous rock. At regular intervals other passages intersected. It was apparent that some cogent intelligence had planned the caverns and domed rooms. Water dripped constantly from the softly glowing walls. The three could see better as their eye pupils continued to dilate.

"Save the batteries in our flashlights all we can," warned Doctor Benson.

The going became rougher—steeper. The passages became narrower and now wound crazily.

Suddenly Doctor Benson stopped with an impatient exclamation. He took from his pocket a small watch-like instrument.

"Thoughtless of me," he muttered, flashing his light to read the instrument. "Twelve thousand feet below sea level, my barometer reads. Well, folks, we've climbed over a mile toward the surface." Then the scientist added in an anxious tone, "How are you bearing up, Joane? Tired?"

"Let's press on," was the answer. The girl's brave words were a challenge to the two men.

Resolutely and watchfully they strode along, guided by the gibbering Atla.

CHAPTER X

The City of Mu

THE three adventurers had no means of knowing the distance they had traversed, as they cau-

tiously proceeded through many miles of corridors, always climbing upward.

Calvert had not spoken for some time. He was in a studious mood.

"Do you know, Doctor Benson," he finally said, "if we ever get back to the surface of the earth, I think I will confine my activities to flying. It is hardly right to subject Joane to this horrible risk."

"Well, well," chuckled Doctor Benson, "of course, my lad, I know you are more at home in the air. By the way, when we were on the battleship California you spoke about flying as comparatively a new science. I did not get a chance at the time to enlighten you. Did you know that there is an old Hindu manuscript dated five hundred B.C. that says Rawan, King of Ceylon, flew over the enemy's camp and dropped bombs, causing many casualties. Eventually Rawan was slain and his flying machine fell into the hands of the Hindu chieftain, Ram Chandra, who flew it all the way back to his capitol, Adjuthia, in northern India. These manuscripts were taken from the same temple records at Ayhodia as was the Rama and Sita Poem and referred back twenty thousand years.

"In the Maha Bharata, written one thousand years B.C., mention is made in this ancient book of the gift of a flying machine by a king to a brother monarch.

"These are detailed accounts showing that Hindus had airplanes twenty thousand years ago. The manuscript describes the engine as taking its power from the atmosphere, that it worked from one chamber to the other until finally exhausted. Once the engine was started, it never stopped until the bearings were worn out. Those ancients must have had atomic energy.

"Rawan in the manuscript was shot down with a circular gun that spit fire

and made thunder. And we think we are an advanced people.

"There are many Chinese records of about the same date describing flying machines that generated their own power as they flew along. We are not brainy scientists. We are ignorant, egotistical fools compared to the ancients."*

Calvert did not interrupt the voluble Doctor Benson. He realized that the learned scientist loved to give out the information he acquired over many years of intensive study. He only commented, "Well, Doctor Benson, I really thought that flying was comparatively a new science. I stand corrected."

For the past few moments Joane had been watching the ape-like Atla, and she spoke excitedly.

"Look! Atla is becoming excited. He is trying to drag us faster."

"By Jove, I believe you are right," snapped out Doctor Benson. "Perhaps we're reaching our destiny, whatever it is."

The passage in which they were now travelling widened rapidly. They noted that many other passages intersected and seemed to meet the one in which they were traveling, as though it were a main artery.

Wider and wider grew the passageway until it was fully two hundred feet across and as many high. The floor was worn smooth as from the feet of countless hordes. The walls now glowed with a more luminous light, and they could see quite plainly.

"Look ahead!" shouted Joane, pointing excitedly. "We've come to a wall."

"It's a steel door," stated Calvert after a quick examination. "The entire end of the passageway is sealed tightly.

* Credit for the information about these ancient manuscripts is gratefully given by the writer to James Churchward's, "The Children of Mu."

Speak to Atla. Ask him if we can gain admittance."

But Doctor Benson was already trying. The ape-like man was dancing about, apparently in great joy, pointing to the door. Finally Doctor Benson seemed to exert a soothing influence over Atla and succeeded in partially quieting the strange human. After a great ceremony of mouthing noises and extravagant gestures, Atla proceeded to one side of the great door. He seemed to know exactly what he was about. Protruding from the steel itself was a lever-like handle. Gibbering like a monkey, Atla reached out, clutched the handle and gave it a series of quick jerks. A great, booming, thundering sound immediately echoed and vibrated through the cavern. The lever pulled by Atla actuated some sound device on the other side of the wall.

They waited tensely. Every few minutes Atla would repeat the signals. The poor, weak brain of the grotesque human seemed to be sure of the signals and the correct time for repetition.

"Sit down and rest," pleaded Calvert, ever solicitous for Joane's comfort. "You're tired, and it's been a tough climb. By the way, Doctor Benson, how far below sea level are we?"

"Ten thousand feet," instantly replied Doctor Benson.

"We are truly standing at the gates of Hell this time," chuckled Joane in her usual plucky manner. "When the gate opens," she added, nursing her light mood, "I should stand with two torches in my hand, as if I were lighting the way for souls in Hades, and pleading with the Devil for the liberation of the fair Proserpina, whom the devil Hades, (God of Hell,) had abducted and desired for his bride."

CALVERT detected the weary note in Joane's attempted levity.

"You are wonderful, Joane, but I know you are tired. Evidently Atla knows the gate is going to be raised or opened. Let's relax a few moments."

"I'm glad we've seen no more bats or huge rats," sighed Joane, as she lay back against Calvert on the cold, hard floor for a needed rest.

Suddenly Atla began to shout with ear-piercing shrieks, and the three adventurers gazed at the steel door in amazement. It was slowly moving upward. Under its lifting edge streamed out a bright flow of light.

Not knowing what strange horror or terrors would be unfolded to them, Joane, Calvert and Doctor Benson grouped together. Calvert stood slightly in the lead with automatic ready for instant use.

Smoothly and without the slightest sound, the immense steel door slid upward, stopping when it became flush with the ceiling.

"Why, there's nothing but another door!" cried Joane.

Moving ahead excitedly, Atla pulled them forward to the next door. There the underground creature seized a lever similar to the one on the first door and pulled it violently once. Instantly and with the accompaniment of thunderous noises, the door began to lift and once more the three adventurers waited nervously to see what would develop. This time their eyes beheld an amazing and startling sight. It was as though the curtain had been lifted on a mighty stage of people and scenery. Thousands of soldier-like figures standing in precise military formation were lined in the cavern beyond the door.

"A race of people!" shouted Doctor Benson. "Look! They're like Atla, except they are more intelligent. See, their features are more regular. They bear themselves more like humans. They

have weapons, and they're wearing armor."

It was true! All the squat, muscular figures with long arms that reached nearly to the ground were covered with some black, metallic looking substance. Monk-like hoods of the same substance apparently for protection covered their heads. Each was clothed or armed in a similar manner. Apparently they were well trained. Each grasped a metal sword that appeared to be of a bronze or copper composition. Even their hands were covered and gloved with the black, metallic substance.

Doctor Benson was delighted. Here was a new world of humans discovered, a strange race of people to analyze; new pages of history to be written; a wonderful experience to relate before his beloved science clubs.

"What do you say, Doctor Benson?" asked Calvert. "Shall we approach them? Maybe you can talk with these people."

"They don't seem to have any leader. Let's advance," urged Doctor Benson.

Resolutely the three strode forward. Atla now showed unmistakable signs of terror and crouched whimperingly at Doctor Benson's side.

In a moment they passed under the great steel door. Even the courageous Calvert felt a bit of trepidation as they advanced between the long ranks of soldiers. The soldiers did not speak. They walked onward, and noted that the passage continued to widen. It was swiftly becoming a cavern of incredible dimensions. The ceiling reached upward until it appeared to be a sky of luminous, glowing light.

Calvert noticed the line of soldiers would form ahead of their advance and move either to the right or left, making a lane to direct their movements. It was plain that the soldiers were thus indicating the route for the travelers.

Finally the line of soldiers made an abrupt turn to the right, and there ahead of the three adventurers was a sight that nearly froze their blood. Under a high canopy of some rich material stood the huge figure of a grotesque human, that had the facial and physical characteristics of Atla, except that the gleaming eyes and larger brain case indicated a shrewd but cruel intelligence.

"Look!" gasped Doctor Benson. "It must be their king, and he is standing on a sea turtle of mammoth size."

Calvert and Joane spoke no word. They only stared with amazement at the strange throne of the king of the underworld. Finally Calvert spoke.

"Great Scott! That turtle is twenty-five feet across. This king can move his throne around with him. He looks like Pluto, the lord of the underworld."

Joane, ever the student of the mysterious in man, spoke. "No, I would say that he is the mythological Hermes, the personification of wisdom, standing on the back of Typhon, the vanquished dragon of Ignorance."

"I hope you're right, my brave daughter," sighed Doctor Benson. "I hope this king has intelligence. I'm going to try to talk to him."

It was a courageous thing to do, and the love of Joane and Calvert for the old scientist was increased to see him bravely stride forward and raise his hands high above his head, palms towards the king. It was the ancient sign of friendship. The grotesque king, who seemed to be incredibly balanced on the arched back of the gigantic turtle, glared at the old scientist with evil eyes. His fish-like mouth began to pule forth guttural sounds, but with more musical tones than those of Atla. To Joane and Calvert it sounded like the twanging of a bass violin.

"Great Cosmos!" burst from the lips of Doctor Benson, who had been listen-

ing intently. "What do you think, Joane and Calvert. The king is talking to me in the language of the lost Atlanteans. I can make out what he says, and he understands me."

With that the doctor began to mouth out guttural sounds to the king, upon whose face now glowed a more friendly light.

Doctor Benson turned to his two comrades.

"It's all right, my friends," he cried, joy beaming on his face. "He can understand me. We've held a conversation."

"What does the king say?" interrupted Calvert.

"He says, 'Welcome, friends, to the lost city of Mu'."

END OF PART I

NOTHING TO IT

"WHAT? Having trouble with your homework again? I'm surprised at you! It seems to me a big boy like you ought to be able to work out your problems for yourself, without always coming to me. Anybody'd think your teacher gave you terrible things. Well, what is it this time? . . . Arithmetic, eh? Well, I can sure show you that. When I was a youngster I almost always got a hundred in arithmetic. I remember one time my teacher said that of all the bright pupils she ever had— All right, Johnny, don't get impatient. There's plenty of time.

"What's the problem now? If A can do a piece of work in four days, and B can do it in six, how long will it take them to do it working together? Say, you don't mean to tell me you let that stump you. Why, that's a cinch. The answer is five days, of course. You simply add them together and divide by two. . . . What? . . . Why would it take two of them longer than it takes A working alone? Because—um—wait a minute. I guess I'm wrong about that. I was thinking about something else. . . . What was I thinking about? Well, never mind.

"Now let's see. A does four-tenths of the work and B does six-tenths. Therefore, together they do ten-tenths

or all the work. This means that, working together, one-half of ten-tenths is five-tenths, and, therefore, one-half of ten days is—no, that's just where we were before. . . . Now don't be impatient! Give me time to think, will you? . . . What? . . . I'm not getting cross. You're getting cross. Now here's where my trouble was. I've got to figure what per cent A is more efficient than B.

"He is 33 1-3 per cent more efficient, and therefore B will do only 66 2-3 per cent of the work. Accordingly, in ten days, B will only do two-thirds of ten, or six and two-thirds days, while A will do one-third of ten, or three and one-third days. Now, of course, we add, and then divide by two, and— Wait a minute, wait a minute. Don't you think I see that we're going to get five again? Now don't be so impatient. I'll get to it, if you only give me time to think.

"Here's what we do. We have to invert— Oh, you've got it, have you? Well, why do you bother me, if you can do your problems yourself? The trouble with you is you're too lazy. Now suppose you tell me your answer, so I can see whether you're right."

—PARKE CUMMINGS.

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Stroheim

By JAMES BROOKE

This story is based on what may be termed advanced surgery with special reference to mental or psychical effects. It is an interesting presentation and the subject is somewhat analogous to thought transference of which we hear so much at the present time.

SIEGFRIEDSTROHEIM watched with fascinated intentness as the slender little snake coiled itself with fiendish cunning about the ribs of the huge dog and in a sudden spasm crushed it to death. An uncanny light broke into his suddenly veiled eyes.

"It'll do. It'll do," he murmured to himself in a satisfied tone. "Strength and intelligence—strength and intelligence is all we need, Judas, to conquer the world." And he stroked the little green snake lovingly.

The long white tiled room was echoing emptily when Siegfried Stroheim, chief surgeon of the New York Clinic, shut off the lights, dropped his pet snake into the right pocket of his huge black overcoat, and stalked out into the almost deserted street.

His somber eyes shone radiantly in the dark with the light of a great discovery. A thin, high-bridged nose and lofty brow, topped with curly brown hair, spoke more of the student than of a dynamic surgeon who entertained plans for world dominance—plans concocted with the ingenuity of a misdirected genius. He smiled pleasantly to himself and regarded the tall buildings with an appraising eye.

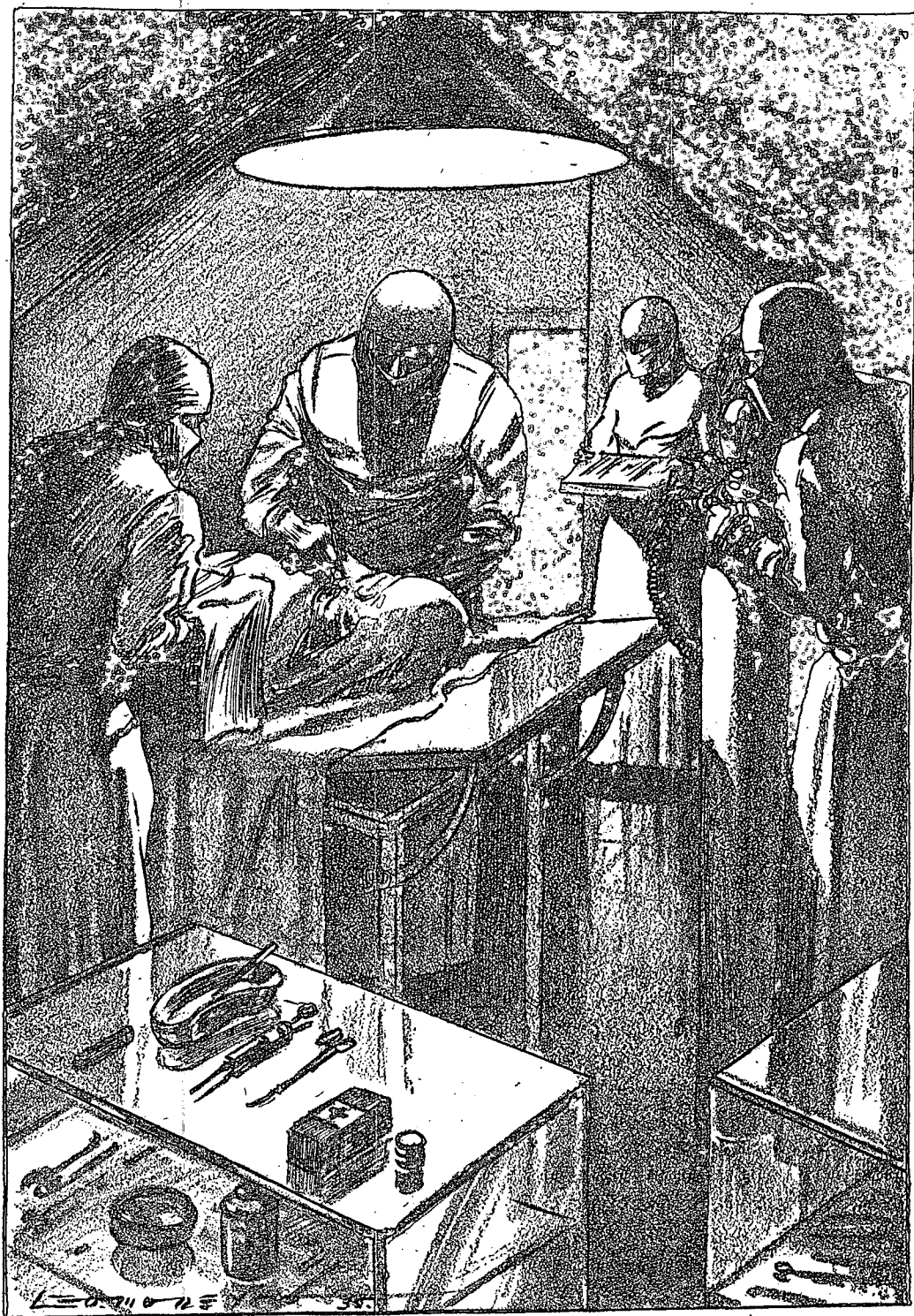
"Mine," he whispered to the little snake in his pocket. "Yours and mine—Judas—yours and mine if my plans are good." With a faint little smile he

swung up the steps of the apartment in which he lived.

Back in Stroheim's laboratory on the top floor of the hospital a stealthy figure emerged from a closet and approached Stroheim's desk. With defiant boldness the figure snapped on the desk light and stood a moment listening. The light revealed a man's face. A face young, handsome in a certain sort of way, but disfigured by a long scar over the eyes. About the corner of the loose mouth a hardness and cruelty lurked. The eyes were black, quick and bright, darting constantly from one object to another, never for a moment stopping.

Muttering softly to himself the man commenced to rustle the papers on the desk. "Where could he have put that paper?" he inquired softly of no one at all. Only the bare walls answered him with an echo. The man glanced at his watch and with redoubled speed ransacked the drawers of the desk. Then he searched through the cabinets around the walls of the laboratory. He seemed perfectly familiar with the place. Finally realizing that his search was futile, he swung out a window on to the fire escape and disappeared into the gloom.

The next afternoon the little nurse who assisted Dr. Stroheim in the surgery was complaining tearfully to the superintendent.



Stroheim's world was a world of flesh—flesh that lay subject to the hardness of scalpel and knife.

"I know, Miss McKay, that he is a great surgeon but is that any reason why he has to be so insulting and call us all dumbbells? Or, 'dummkopfe' as he calls it," she added spitefully.

"I know that he is very hard to put up with, but he is unquestionably the greatest surgeon in America and we must make allowance for his genius."

The little nurse twisted her mouth into a pout. Her blond hair tumbled into her eyes and made her look like a small child. "I don't think he is so good at all," she muttered.

The superintendent drew herself up haughtily. An idol had been profaned. "Miss Clarke," she said severely, "I think you do not realize what you say. You have had a strenuous day and I recommend that you get rest immediately. Afterward you will be more pleasant to talk with." And with that she swept out of the room, her starched dress rustling indignantly.

The surgery was buzzing with the voices of the internes as the superintendent entered.

"Did you see how he did it?"

"No. He worked too fast for me to see."

"It's incredible that anyone can work so rapidly and yet be so sure of touch. Personally I wouldn't mind an appendectomy, but when you get to working on the cerebral cortex—no, thanks."

The superintendent inquired the cause of the excitement and was rewarded with the information that Dr. Stroheim had performed a difficult operation on a delicate portion of the brain in a remarkably short time. The superintendent nodded happily. Stroheim was an idol of hers.

"Dr. Stroheim is very capable—he will go farther than this," she prophesied.

"Watts, Mason, Kennedy," a cold,

incisive and almost regal voice broke in upon the group. "You will have the surgery prepared for a cerebral operation tomorrow morning."

THE three internes who had been named stiffened to deferential attention. The superintendent surveyed the figure of the doctor. In him she visualized a reincarnation of an old Greek god. Slender, supple, dynamic, he fairly vibrated with nervous energy. But in spite of this, the cold and analytical light of intellect shone through frigid and impersonal eyes.

Having delivered himself of these orders, he stood for a moment regarding the internes with a peculiarly penetrating gaze. They shifted uneasily. Abruptly he left.

"Gee," an interne said relievedly, "Stroheim sure bores through a fellow with those eyes. Honestly, I feel stark naked when he looks at me like that. I'm afraid to think."

"Yeah," another agreed, "he sure has the old gimlet eye."

That night Siegfried Stroheim stroked his little green snake fondly, and whispered: "Tomorrow, Judas—tomorrow we start the conquest of the world. You and I—you and I will be masters of the globe."

The snake coiled gracefully and sinuously. A slight hissing came from its mouth as it nestled its head in the warm hollow of Stroheim's hand.

It was a cool, gray morning when Stroheim entered the hospital from the deserted streets. To him it was the ideal time for operation. There was less bustle and noise to distract him and this morning he knew that he would have need for all his skill. The operation which he planned had been declared impossible by some of medicine's most prominent men. Stroheim smiled to himself and his lip curled a

bit scornfully as he thought of them. He held a vast contempt for the average medical man who was content to prescribe pills and console nervous women. He preferred surgery where danger lay and where every knife stroke revealed a new phase of life. Stroheim's world was a world of flesh—flesh that lay subject to the hardness of scalpel and knife. And indeed, the surgeon himself on that morning bore a resemblance to a scalpel, he was keen, purposeful.

In the surgery a little, gray man lay on the table. The heavy, sickly-sweet odor of chloroform filled the room. White masked figures moved noiselessly about in obedience to staccato barks from the surgeon, Stroheim. At last the surgeon straightened his back. The operation was over. He departed. The minor details were left to the others.

Out in the street again, he breathed freely and allowed himself the luxury of feeling jubilantly happy. Everything had gone as he had planned. The operation was decidedly successful. A peculiar feeling thrilled him. The thought of utterly controlling the minds and bodies of the people of nations nearly unbalanced him. An almost insane light of elation filled his eyes. He returned and walked down the tiled corridors to the operating room.

"Miss McKay," he ordered, "when the patient regains consciousness, call me at once. I wish to talk with him before the final coma sets in."

"You mean, Dr. Stroheim," she inquired hesitantly, "you mean that your operation wasn't successful?"

"No, no," he returned impatiently. "The operation was a decided success but the patient will not survive. He was sinking anyway, and I merely

used him for an experimental subject."

The superintendent's eyes dilated slightly.

"But, Dr. Stroheim," she protested, "the rules—the rules say—"

"Forget the rules. I am the chief surgeon, am I not?"

Miss McKay gasped. "But, but—"

"Forget it," came like the crack of a whip. "I see that I should not have told you what I did. Your job from now on is only as secure as that secret is with you. Understand? Now, call me when Brent comes to." And he strode down the corridor leaving the superintendent with burning ears.

Sometime later, Stroheim at the desk in his spacious and well appointed office was interrupted by a slight knock at the door. The superintendent entered deferentially.

"Mr. Brent is conscious, Dr. Stroheim," she announced.

THE little gray man, his head swathed in bandages, lay limp on the bed. His tired brown eyes raised themselves to those of the doctor.

"I didn't want you to operate, doctor," he reproached gently. "I haven't anything to live for. I'm tired and I would just as soon die. I don't want to live."

"You won't." The words came frankly, almost callously. "You will die before night."

"Wasn't the operation successful?" the little man was but mildly interested.

"Perfectly." The doctor and the patient seemed to understand each other. "I used you for an experimental subject—tried out a new operation on you. I can assure you that it was most highly successful. You were marked for death very shortly anyhow. All I

did was to hasten it a bit." He seemed to defend his actions.

"That's all right, Doctor Stroheim. I'm ready to go any time."

"Not until I am through with you."

"Any time."

"I'll be back this afternoon to test the results of the operation," Stroheim announced as he slipped out the doorway.

"He's doing well," he told the superintendent who waited for him outside the door. "But he won't last the night."

"I wish you wouldn't tamper so with other people's lives, Dr. Stroheim," the superintendent said nervously.

"Why not?" he whirled on her. "If they give them to me why not make the most of them. I would rather use a willing subject than have to kidnap an unwilling one."

Surprised by the sudden fury of his question, the superintendent quailed.

"Why, why, what do you mean?" she hesitated.

"Just this," he said. "The time is not far distant when I shall do with people as I choose and—" he stopped abruptly, looked sharply at her. "I'll be at home in case I am needed," he finished. Turning sharply, he left her standing alone and wondering.

That afternoon as he entered the little cubbyhole room of Brent, Stroheim realized that the final verification of his theory was shortly to be made. He surveyed the recumbent figure.

"Sit up," he commanded sharply.

Like a machine, the patient complied and sat there watching the doctor with slow-moving brown eyes.

"Stand up." Without a word of protest Brent slipped to the floor and stood swaying.

Stroheim drew a short bar of iron from his pocket. It was a file. He handed it to the man.

"Break it," he ordered.

The patient tried vainly. Stroheim appeared satisfied. He bade him desist. He ordered the man back to bed. Then, approaching the table on which the medicines were standing, he selected a peculiarly nauseating one and poured out a glass of it.

"Drink this," he commanded extending it to the patient. The patient complied unhesitatingly. The surgeon nodded happily.

"All right, Brent," he said. "Don't forget who I am. You may do as you wish this afternoon."

"Yes, Dr. Stroheim," Brent said. His attitude of the morning had vanished. Where before there had appeared to be some equality between the men, now Brent had assumed an intangible air of subservience.

The surgeon laughed suddenly. A shrill laugh that chased up and down the spinal column. And then he was instantly sorry that he had even momentarily allowed himself to slip out of his habitual pose of aloofness. Angry with himself, he retired to his laboratory where he buried himself in work.

SOME time later he was aware of another's presence in the room. He looked up.

"Doctor Stroheim," the superintendent who had entered quietly asked him, "where is your assistant?"

"Dr. Earl will be back in a little while. I don't know where he went."

He returned to his work but the woman made no move to go. She just stood there before him. He spoke again.

"I said that I didn't know where Dr. Earl was," he repeated more distinctly.

"I heard you before, Dr. Stroheim,"

she returned. "May I wait for him here?" she asked.

Stroheim growled his assent. "What a pest!" he exclaimed to himself. "Women were all pests — especially this superintendent," he reflected. She was a bigger nuisance than even that little blond nurse in the surgery — the way she came in and sat around waiting for the assistant to come in and then left as soon as he did come back. Wasted more time than she ought, doing such things. Acted as if she came more to be with him than with his assistant. This last thought amused him and he looked up half smiling. The superintendent perceived an opening.

"How are your researches coming along?" she asked.

Stroheim smiled coldly. "Very well," he replied noncommittally.

"You work so hard on them that I think you should do very well. Why last night I saw a light up here at about midnight."

"What?" Stroheim jerked to attention. "A light in my laboratory at midnight? Impossible! I was home in bed at midnight."

"There was a light up here just the same."

"Who was here?" he asked quickly.

"I don't know."

Stroheim was alarmed. Could anyone have broken in and stolen his formula? He rummaged in his desk and removed a little slip of paper from an envelope. He breathed relievedly.

"Miss McKay," he said, "I believe that we shall have to put a guard up here in the evening. I have some very important formulae here that many people would give anything to possess."

"How wonderful! What are the formulas?"

The surgeon curled his lips.

"I don't want it known for a while."

"Who would want it, then?"

Stroheim was tempted to reply but he was forestalled.

"I do. Give me that paper," a voice at the door of the laboratory commanded.

The surgeon and Miss McKay whirled around and confronted the muzzle of a vicious little automatic. Their glances swept up to the holder of the weapon. A pair of black eyes leered at them from beneath a long scar across the forehead. Loose lips were tightened into a triumphant grimace.

"Earl! You wouldn't," gasped Stroheim, white with mingled anger and reproach.

"Oh, wouldn't I? Come on. Give me that paper," he ordered savagely.

"Come and get it."

"Ugly, huh?" the assistant gestured significantly with the gun. "Get those hands up. Higher. Now get away from that desk."

Keeping the gun trained on the surgeon, the assistant advanced to the desk, and pocketed the formula.

"Well, Sieg, old kid," he said jocularly, "thanks for putting the world in my hands."

"You won't make it, Earl," Stroheim said with cold fury. "You'll never make it."

"Whatta ya mean—I'll never make it?" snapped the assistant savagely. "Haven't I got the formula, huh?"

Stroheim perceived his error and remained silent.

"Come on, you. Why won't I ever make it?"

SILENCE. The scar on the assistant's brow grew suddenly purple. "Oh, I see—the operation. I can't

control people until I perform the operation on them, can I? Thanks for the tip, old fellow. Now you can tell me how you did the operation. Come on—get it out.”

He raised the gun.

“You can’t bluff me that way, Earl,” Stroheim spoke deliberately. “You couldn’t force me to tell you with a torture-rack,” he laughed in the contorted face of his assistant.

“If I don’t get the right system out of you I can perfect one of my own, anyhow,” he replied angrily. “But that would take too much time. If you don’t tell me that operation by the time I count to ten—” he broke off and patted the gun.

Stroheim laughed.

The assistant raised his gun. “One,” he said distinctly. “Two. I mean this, Stroheim. Three. Four.”

The surgeon’s lips moved into the position of a smile but no word came past them.

“Nine,” counted the assistant. “I am serious, Stroheim. If you don’t start before I say ‘ten’ I’ll shoot.”

Silence.

“Ten.” An explosion drowned out the last part of the word. The superintendent screamed as Stroheim slumped to the floor, blood spurting from his right shoulder.

Even in his haste to leave, the assistant perceived that the shot had not gone true. “Bum shot,” he laughed at the superintendent. “I’ll get him later,” and he rushed out the door.

Down on the main floor an interne stopped him.

“Hey—where are you going so fast. Just a minute. What was that shot up there?”

Gasping, “Stroheim shot himself. I’m hurrying to get the coroner,” he

freed himself and vanished into the street.

Weeks later, by now nearly recovered from his wound, Stroheim was being driven about the city by Miss McKay. All during the convalescence the superintendent had treated him with utmost kindness and consideration. Anything in her power to make him comfortable was done. At first Stroheim was puzzled by her attentions. He could not understand why anyone should try to make him happy. Once he had offered to pay her for her trouble, and Miss McKay, tears in her eyes, had abruptly left him. Since that time he had given it up as hopeless and now accepted passively her attentions. Now, almost recovered, he had slumped into an attitude of despondency. In an endeavor to awaken him from these moods, Miss McKay had borrowed a car and driven him out through the city streets into the country. The car passed beside a little lake. Ahead was a space at the side of the road where drivers frequently stopped to admire the placid beauty of the lake. Stroheim stirred.

“Do you mind if we stop here for a while?” he asked.

WITHOUT a word the superintendent swung the car into the little space. After a silence of several minutes, the surgeon commenced to speak.

“I can’t begin to tell you, Miss McKay,” he said staring directly before himself, “how much you have helped me to recover my strength. There has never before been anyone so kind to me and I am at a loss to explain my gratitude. All along you have revealed yourself to be extremely understanding and because of this last I am going to tell you what lies behind my assistant’s attack on me.”

"A year or two ago I read in a technical magazine that a Cleveland scientist had tried to ascertain the muscular power of a chimpanzee. This was difficult to do inasmuch as he could not induce the animal to pull on the same apparatus he used on men. Finally he hit upon the idea of teasing the animal. He persuaded three big football players to pull on one end of a rope and the chimpanzee to grasp the other end. Then he teased the animal until in a fit of rage it jerked the rope with one hand and pulled all the men off their feet.

"This gave me grounds for thought. A chimpanzee does not weigh as much as a heavy man. Its bones are lighter, yet it is much stronger. What can be the reason? I at last concluded that it lay in a greater innervation of the muscles. By that I mean that the muscles received more powerful neural impulses than those of a human being, and as a result reacted more powerfully.

"Working on this theory, I decided that if one could find a method of strengthening the nervous impulses, an equivalent strength could be developed. I stumbled, after a long period of hard work, upon a formula that seemed to work. It had the property of producing electrical energy when in contact with organic tissue. The electrical current was easily transformed into nervous energy.

"I at first tried out the powder on my pet snake, Judas. It worked very well. The snake coiled about a dog and crushed it with no apparent difficulty—yet this should have been impossible. Then I tried it on myself. Marvelous! I was given miraculous muscular strength.

"My scheme for producing greater strength worked very well, but an even greater wonder came of it—I

discovered that after using the powder I was enabled to think much more clearly and rapidly.

"Then I found myself impatient with other people who were working with me, for being so slow and stupid. The idea occurred to me that there was no reason that I should not be able to control the world. I had the advantage of greater muscular and mental strength. I considered, and at last concluded that this would be possible if I could get control of the minds of people. Then, I discovered that if one performed a certain operation on the pituitary body, the person would lose control of himself to the individual who performed the operation.

"That was as far as I had progressed. My plans from then on were somewhat hazy. But my assistant, Dr. Earl, learned of the possibilities of my powder and operation. You know the rest.

"Now, the thing that troubles me so is this: Perhaps you have read the financial news reports of the day. If so, you will have noticed that a strange power has come into the market and amassed a tremendous fortune during the time that I was recovering. I am convinced that that power can be none other than my ex-assistant. He plans to use financial power as an entering wedge for further domination."

Stroheim fell silent again. Miss McKay, who had not taken her eyes from his face during the recital, now stared across the lake with him.

"And so—" Stroheim continued—"the world is in great danger. There is so far as I can see, no one but myself who has the knowledge to cope with the insane mind that has robbed me of my formula. He is insane, Miss McKay," Stroheim turned to his companion. "I am utterly convinced that

he is. And think what an insane mind like that could do to the world!"

Miss McKay was thoughtful. "If there is any way that I can help—" she suggested, raising her eyes. Involuntarily they sought the rear-view mirror. What she saw in it caused her to gasp. Then turning to the surgeon, she spoke distinctly: "I do not share your opinion of Dr. Earl," she said. "It is my belief that Dr. Earl is the possessor of the most brilliant mind in the world today—not excluding yourself or Einstein. It is a most despicable trait in a man to blacken the character of someone a woman loves. Dr. Earl is my ideal of a man. Handsome, brilliant, masterful. Oh, I think that I would do anything for a man like that."

STROHEIM, aghast at the sudden turn in the conversation, turned to her in amazement. Drawn out of his cold aloofness by the superintendent's constant care, he allowed himself to reveal his astonishment even more by dropping his jaw.

Someone opened the back door of the car and climbed into the seat.

"Just sit still everybody," a voice commanded. "All right, now, Miss McKay, if you would do anything for a man like me, just drive me to the Empress Building."

"Certainly, Dr. Earl," and the superintendent put the car in motion. Stroheim stirred.

"Don't try anything funny, Dr. Stroheim," the mocking voice commanded sharply. "That little gun that bit you a while back is looking right at the back of your head. You and Miss McKay are going to keep me company up in my lab. Maybe Dr. Stroheim will be able to help me with some operations I am planning."

"Now, Dr. Stroheim," Dr. Earl

smirked when they had reached the roof-top laboratory, "I have the most beautiful little place for you to stay while you visit us here." He indicated a large iron cage in a corner of the laboratory. "I think that you will be very safe and not so very comfortable in that little home." And he laughed loudly. "Get in it," he commanded roughly, pointing with the gun.

When the surgeon had been securely locked in the cage, the assistant turned to the superintendent. "Doesn't he look sweet in there?" he asked mockingly.

Miss McKay nodded assent and approval. "Just where he belongs, Dr. Earl," she said.

Earl turned to her and embraced her with smouldering eyes. "Not Dr. Earl to you," he said gently. "Call me Hugh."

The full red lips under Miss McKay's short, pert nose flashed into a wide smile. "I've always wanted to call you Hugh."

"And I'll call you Alice?"

"Why—of course!"

The assistant turned to the surgeon who, apparently lost in thought, had not uttered a word since the assistant had first accosted them, and, "We'll leave you to your meditations, Marcus Aurelius," he laughed. "Come on, Alice, we want something to eat."

At the door the scar-browed man turned and chuckled. "Tonight, Sieg old kid, we'll show you my little operation. You can see how one is done and tomorrow morning, sweetheart—you'll be the subject."

Stroheim stared contemptuously at the man and turned his back.

The door banged viciously.

The surgeon passed a troubled two hours until the two returned. What could he do to thwart the designs of the ex-assistant? He realized what

terrible power lay in the man's hands and what effects a misuse of this power could bring. True, he reflected, he himself had at first entertained plans for a world dominance, but his own ideals were far different than those of this usurper. He had wished to control merely for the sake of controlling and not for any selfish reasons. The reforms, the improvements, the advances in science, that he had contemplated, if he could achieve his desires, were all of an altruistic nature but those of his ex-assistant—ugh! The thought of the man almost sickened him. What a chaos this other would wreak. The very face of Dr. Earl was sensual and Stroheim could only vision an orgy of sensuality under the impending regime of his former laboratory assistant.

A NOTHER thing puzzled him. The behavior of Miss McKay. He wondered why she had cast her lot with that of the usurper. Couldn't she see the ultimate outcome of such a course? Stroheim realized that his knowledge of the feminine sex was very limited and, since he had heard of the inconstancy of it, he ascribed her conduct to this trait. He was puzzled by his feelings toward her. He had never felt toward another human being as he felt toward her. When she was away from him, he was aware of a vague emptiness and, whether he would admit it to himself or not, her presence always cheered him.

But for a life-long schooling of his emotions, he would have broken into wild cursings at his present plight! As it was, however, he disguised a very troubled interior by a serene, coldly aloof countenance, and when Dr. Earl and Miss McKay returned, he was calmly reading a magazine he found inside the cage.

"Sorry, old fellow, that we couldn't bring you back any of the delicious dinner we just enjoyed—we didn't want to look foolish carrying it up the elevator. Maybe you'll get something to eat tomorrow—who knows?" breezed the assistant.

"Yes, Dr. Stroheim—perhaps we can get something for you tomorrow—Hugh?" the superintendent mocked him.

Stroheim continued to read undisturbed. Dr. Earl cursed suddenly.

"I didn't bring you up here to read," he exploded. "I brought you up here so Alice and I could have some fun. She just told me a few of the things you said and did to her back at the Clinic. It's our turn now."

For the next few minutes the assistant and Miss McKay abused him with taunts and insults. Finally, throwing a bucket of cold water on him, they ceased their torments. Several times he was belabored with blows because he would not listen to them. He noticed that Miss McKay did not hit him nearly so hard as the man, but decided that it was due to her inferior strength. At length, they turned to go, and as they whirled about, the superintendent hurled a short piece of metal at him. "There's a fountain pen to write your will with," she laughed at him. Stroheim caught it and then instantly hid it in his coat. Had she realized what she was doing? He wondered. She had thrown him a broken hack-saw blade.

"Oh, by the way, Stroheim, if you get out before we come back—there's a little of your powder in that box on the desk there," the assistant laughed hugely at his own joke. "Perhaps it would make you feel better."

"Whether you know it or not," Stroheim muttered to himself, "that

little tip is going to cost you a lot—just the same as that woman's mistake of throwing the saw at me."

WHEN he was alone, Stroheim commenced instantly to work on the bars of his little prison. Realizing that time was short, he spurred himself to top-speed. To his pleasure, he found that the iron was soft and the blade sharp. In a very short time he had sawed through the tops of the bar. He tried to force them apart but his strength was not sufficient. Hurriedly he commenced on the bottom. When he had nearly sawed through the bottom of the bar, he heard footsteps approaching. Miss McKay's light tinkling laughter warned him that he must hurry or be too late. He seized the bar and tugged. It gave a trifle. He tried again and it moved about an inch. "Just one more minute—" he gasped. The door of the outer room opened as he forced the bar aside and squeezed through the space. He whirled to the desk. "If Earl comes in now—" he thought. He waited for the inner door to open. There was silence a moment and he heard a man's voice laugh softly in the other room. Then a woman's voice—softly. He forced one of the capsules in the box down his throat and turned to the door. Yet it did not open. Then he heard Miss McKay's voice protesting, softly at first and then more loudly. "The powder will act in just a minute," he told himself. Suddenly he could feel a new strength pour into his limbs. He stretched himself and flexed his arm and felt the muscles ripple. There was a sound of struggling in the next room.

"Don't, Dr. Earl—Hugh—stop it," he heard Miss McKay saying. A surge of anger swept over him. He burst open the door into the outer room.

"Take your hands off her," he commanded.

Earl and the superintendent sprang apart. "Stroheim," gasped the man.

"Yes.—Dr. Stroheim to you."

"Get back in that cage," the assistant reached for his pocket. Stroheim leaped forward like a cat, his slender, well-proportioned figure moving with the grace and speed of a striking snake. In a second he had the other by the throat and was banging his head on the table.

Earl got his feet beneath him and straightened up quickly, hurling Stroheim over his shoulder. The surgeon lit in a heap and whirled just in time to avoid the assistant's first shot which went wild and broke the main light bulb. Before the other could fire again Stroheim was on him. He started to wrest the gun from him but the other threw it to the superintendent, saying, "You get him if I don't kill him with my hands." And with that he hit the surgeon a blow in the pit of the stomach.

Things suddenly darkened for Stroheim. Throwing his arms tightly about the neck of his former assistant, he hung on grimly until his head cleared.

Earl was heavier and more muscular than Stroheim and the latter realized that in this close fighting he was at a disadvantage. He struggled to free himself, but to no avail. The short bulky assistant seized one of Stroheim's arms and started to throw him by a whip-wristlock. Stroheim dived to the ground and rolled, grasping the legs of his assailant as he did so. The other came tumbling to the ground. Stroheim whipped a body scissors about Earl but the scabbrowed man grinned horribly and caught him by the throat. The surgeon tightened his legs and the other's

face grew purple. He tightened them a little more and Earl bellowed as something cracked. Seizing Stroheim by the head, the assistant bent Stroheim's neck until it was doubled nearly underneath him.

"Got him, now, Alice," he panted hoarsely. "I can't hold him. Shoot him quick."

Miss McKay, who had been standing wide-eyed watching, leaped forward and Stroheim looked up into the muzzle of her gun. He twisted and the gun muzzle followed him. With energy born of desperation, he freed himself and jerked Dr. Earl's body in front of his own. Miss McKay shifted and Stroheim was again within range. The surgeon placed his assistant once more as a shield for his own body. So intent was he, however, on avoiding this second danger that he forgot to guard against the man. Suddenly he found his arms pinned to his sides and his throat gripped. He struggled to breathe but couldn't. His temples pounded unmercifully and he felt his head being pounded on the floor.

Pinwheels spun grotesquely before his eyes. He felt consciousness slipping from him. With an effort he opened his eyes and saw the superintendent aiming at him with the gun. Fascinatedly he watched her finger tighten on the trigger. He ducked. There was the sound of a distant explosion, and he felt a sharp pain in his shoulder. The grip on his throat relaxed. Dr. Earl, with a puzzled expression on his face, suddenly slumped like an empty bag.

"Missed me," he thought exultantly and prepared to dodge the next shot which was sure to follow. Then he was aware of someone helping him to his feet. He stood up, arm hanging limply, and faced the anxious gaze of Miss McKay.

"Oh—I'm so sorry the bullet hit you. It was the only time I could shoot without seriously wounding you—here, let me bind it up for you."

Stroheim sat down tiredly on a stool and watched with puzzled eyes as the superintendent bound up the wound in his shoulder.

"You deliberately shot Earl instead of me," he accused simply.

Miss McKay nodded happily. "He needed it," she said.

"And you deliberately gave me that hack-saw blade."

"Wasn't that a clever way of getting it to you?"

FOR the first time Stroheim was really aware of the soft dark eyes above the finely chiselled nose, of the full red curve of the lips beneath and of the slender youthful figure that stood so closely beside him. Somehow the ice had gone out of his being. "Was it because—?" he asked hesitantly.

Miss McKay leaned closer to him. With his one good hand he clasped her tightly.

"Miss McKay—Alice—it wasn't my fault that—that—" he floundered for words.

"I know," she murmured.

He was silent. "Somehow," he said after a moment, "I do not wish any longer to control the world. I don't want to raise the world by its bootstraps as I had first planned. I think that I should rather—"

"Rather give the world an example and an ideal?" Miss McKay finished.

"Yes," he said softly, staring through the window. "Like Pasteur. Like Louis Pasteur."

"That—that would be much more noble. Much more."

There was a silence.

"But—but—" the surgeon said, "that, with a secret such as I possess would take a strength of character far greater than mine." He turned to the face uplifted to his. "I need a support, something to hold me to my new, higher ideas of science. Do you—could—would you—"

Miss McKay nodded happily. "Yes," she whispered.

Stroheim raised his good arm and held her tightly, as one would hold a peachblow vase. He could feel within himself a new strength opening, blossoming out, promising a golden glorious future.

THE END

Questionnaire

1. What is the history of "permanent gases"? (See Page 7)
2. What three states of matter affect gases? (See Page 7)
3. What is the etymology of the word "gas"? (See Page 7)
4. To whom is the word gas ascribed? (See Page 7)
5. What were the early experiments in producing illuminating gas? (See Page 7)
6. What was the extent of time when gas was used for lighting? (See Page 8)
7. Cite some examples of the candle powers or light given by the old time gas burners? (See Page 8)
8. What fears were entertained about gas pipes being hot? (See Page 8)
9. What two early kinds of gas pipes can be described? (See Page 8)
10. What is water gas and how is it produced? (See Page 9)
11. What revolutionary invention was made in gas burners with resulting economy? (See Page 9)
12. What problem in electric lighting did Edison solve? (See Page 9)
13. What is the last development in electric lighting? (See Page 10)
14. Describe from the text, the operations of the trap-door spider. (See Page 23)
15. What is the name and composition of the material used for runways for airplanes? (See Page 27)
16. What does the word "maelstrom" mean? (See Page 28)
17. How are ocean depths determined with the sonic depth finder? (See Page 33)
18. What group does the octopus belong to? (See Page 44)
19. How is the state of matter affected by temperature? (See Page 71)
20. Give a theory of the cause of the high specific gravity of some stars. (See Page 71)
21. What is a typical height of a solar prominence? (See Page 74)
22. What is the diameter of the sun? (See Page 75)
23. What are sun spots supposed to be by astronomers? (See Page 75)
24. What is the name of the great Alaskan bear? (See Page 116)
25. What is the term for the study of earthquakes? (See Page 82)
26. What discovery in physics is attributed to a chain of accidents? (See Page 84)

We of the Sun

By HENRY J. KOSTKOS

This production of a very well known author, based on the solar temperature and the atoms of matter, is a fantasy touching on the higher elements of physics such as the constitution of the atom and the effect of stripping the atom of its outer planetary electrons.

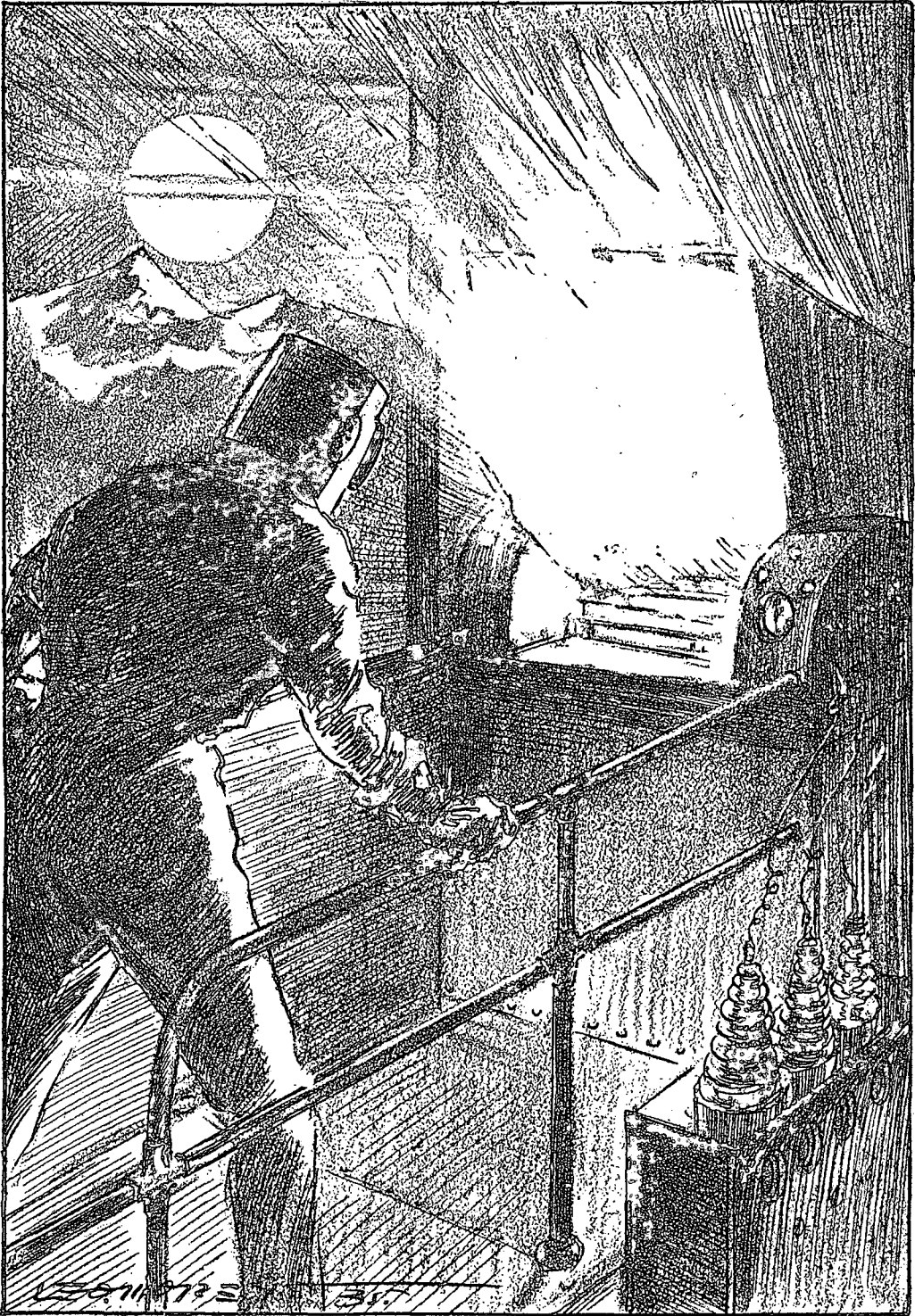
ASK any scientist about the probability of finding life on Mercury, Venus, Jupiter, Saturn, or far off Pluto. He will shrug his shoulders, smile with superior disdain and say: "My dear man, it is absurd. Those planets are either too hot or too cold to support life as we know it," then launch into higher mathematics to prove to you that the intensive heat or the absolute zero temperature prevailing could not possibly permit any form of life to exist. These scientists amuse me. Oh no, I'm not going to dispute their statements nor take issue with them regarding the status of life on the planets. As a matter of fact I'm not particularly interested in any of the planets, except earth whereon I once dwelt. But when you mention the Sun, ah, there you touch upon my weakness.

Suppose I were to tell you that I have measured the internal heat of the Sun and can assure you that it is rather torrid, registering on your Fahrenheit scale the unbelievable temperature of 42,672,000 degrees. Then if I were to allude to the possibility of finding life there, you would look around with alarm for the nearest exit, to get as far from the madman as possible. But no need of being afraid, as I can't talk to you face to face anyway. So I will make a very definite statement: There is life on the

Sun! Living creatures, breathing incandescent vapors, moving at tremendous speeds against the violent storms in its gaseous interior. How do I know? Because I am at the very moment you read this message a resident of the star you call the Sun!

Incredible? Yes, but true. Heat of those extreme temperatures that have baffled men of science for generations, has yielded to me its innermost secrets. As an obscure professor of physics in a second-rate college, I would habitually ramble from my lectures on molecular forces in liquids, or on the acceleration of a freely falling body, or on resistance and electromotive force, to find myself expounding my latest theory of atomic readjustment under high temperatures, or the vaporization point of a hydrogen atom. As you may well surmise, it wasn't long before the dean called me into his office and suggested rather sourly that I could probably benefit the world at large more effectively, if I were to devote my entire time to thermal research problems.

Instead of being depressed, I was highly elated. Until I remembered that I had to go home and tell Louise. It would be hard, with baby Margaret, a frail, sweet child, needing constant medical care and a special diet. But to my joy, Louise took it bravely, as the wife of a fanatic scientist must do, if



I took one last look and went inside and warmed the furnace until the thermometers registered 100,000 degrees. For a moment I debated about stripping myself of the protection of my mask.

she is to live a reasonably congenial life with her husband.

She looked at me with those big brown eyes of hers and said: "I know that you will succeed in your work now, Harry, since you broke away from those hide-bound, old hard-shells at the college." That's all she said. Never a word about where our next meal would be coming from, or the money to pay the doctor for little Margaret, or the amount due on the back rent for our tiny apartment. For even during my teaching days I had been careless about bills for anything but the precious equipment I bought for my private laboratory.

Even now when I think about the splendid apparatus, instruments and devices I was able to amass and construct, I am filled with pride. Every conceivable instrument for thermometry, atomic guns, regulating devices, spectrosopes, and ray analyzers were arranged compactly within the small laboratory. But my main achievement was the regenerative heat-concentrating furnace which I had never dared operate at its maximum capacity. It was in this furnace that atoms and electrons would surrender their secrets to me.

We were served with a dispossession notice. Back in the hills in the northern part of the state, there was a decrepit cabin belonging to an old friend of the family. He had built it for a hunting lodge, but now that he was an invalid, it had gone to ruin. I asked him for the use of this cabin and after testily pointing out what a lunatic I was to think of taking my family fifty miles from civilization to starve there, he had the cabin put into first class condition, packed up my laboratory equipment and scanty furniture, and along with provisions to last six months, he sent me there with my

family. I have never seen him since, and if he is alive now, I want this message of my most sincere appreciation conveyed to him. For once again I am happy in my new home, far from the earth.

BACK in the hills I left all thoughts of the world far behind. There were three rooms in the cabin, the largest of which I monopolized for my laboratory. There was no gas or electricity, so the first task was to build my own generating plant. A swift running stream nearby lent itself admirably to damming. Here, with Louise's help, I installed a turbine and a high frequency alternating current generator. The labor was excruciating for never before had I done heavy work with my own hands.

It was springtime, when the trees were new with their coats of green, and the meadows smelt sweet from clover. There on the banks of the stream Louise and I would throw our weary bodies on the soft grass, while little Margaret looked contentedly on the peaceful world with her mother's large brown eyes. I am not a sentimentalist. But I can not recall these earthly pleasures without suffering a touch of nostalgia. Where I now dwell there are no cool green things, only white-hot gases that swirl past me like storms of the Inferno.

Through electrolysis I was able to derive a sufficient amount of hydrogen and oxygen gases for ordinary domestic and laboratory heating purposes. But for my experiments into the higher reaches of temperature—past the white heat, and into the invisible spectral range, I improved my regenerative concentrating furnace. When the thermometer first registered 40,000 degrees Fahrenheit, you could not hold me. I called to Louise to come

and rejoice with me in my triumph. But she could not leave poor little Margaret, who had been lying ill for the past fortnight.

Now if you will bear with me I will try to summarize briefly my achievements. You are familiar with the elements of heat and its application. You have seen water in its solid state; then with an increase in temperature the ice would be transformed into a liquid, finally at 212 degrees it would become a gas. Other substances, such as metals and even solid quartz behaved in exactly the same manner, providing that you stepped the heat up to correspond to the melting or vaporization point of the materials.

Very elementary. But it serves as a beginning. (I hope fervently that I shall not revert to my dull lecture-hall manner in telling you about these things!) What happens when the temperature is increased beyond the wildest dreams of earth scientists? When the limits of the electric furnace, hydrogen gas, thermite and other sources of incandescence have been exceeded? My experiments proved that at 40,000 degrees the helium and hydrogen atoms are stripped of their planetary electrons and nothing but the nuclei or protons remain. Thus it is that in the interior of the stars (including my homeland, the Sun) even the heaviest atoms are stripped, if not to the nuclei, at least to the innermost, or K ring of two electrons. You can see that the diameter of such stripped atoms may be a hundred times smaller than those of normal ones, bringing about a condition whereby the densities of these cosmic bodies are thousands of times as great as those, with which you are familiar in substances found on the earth.

Therefore, familiar substances assume unrecognizable forms when they

have been subjected to this process. So when I placed metals like lead and iron and copper in my furnace, taking care to confine the resultant gases, so that they could not escape, I would derive new elements, that did not come under any known classifications. But these elements were entirely too unstable to permit detailed analysis. Before I could bring my instruments and reagents to bear upon them, they would disintegrate and vanish into the air, like a puff of smoke, only infinitely faster.

THEN one day I resolved to set up a special and elaborate apparatus to determine the course that these disintegrated substances took. I charted their direction for weeks, at different hours of the day and night, and developed an optical device, the binovaposcope, with which I could make them visible. And in every instance the gases shot straight out toward the same objective as if drawn to it by an uncontrollable force. And that objective was the Sun!

By this time I had been able to increase the heat generated in my furnace to 100,000 degrees when an accident occurred that changed the entire course of my experiments. It is such accidents as these, that have been responsible for many of the most remarkable inventions of the past, and I dare say that they will function in the same manner in the future to provide the world with advances in the sciences. I neglected to mention that, when we embarked on our hegira from the city, we brought along our faithful shepherd dog, "Follower." Louise said he would be a play-mate for little Margaret and a protector if the need ever came.

"Follower," chose the laboratory for his sleeping quarters, and I would

welcome the beautiful animal as someone to talk to, during those long hours of the night, when I labored alone till the gray in the east heralded the coming of another day.

The new high temperature was even more intensively blinding than the lower ranges I had been working with. My eyeshade and helmet with its carbon dioxide vapor cooled glass vizard, heavily, tinted, did not permit me to see anything but the base of the incandescence within the furnace. I had consequently erected a system of handrails leading from one part of the laboratory to the other, so that I could depend upon my sense of touch in moving about. "Follower" always cringed in the corner behind the protection of the asbestos shield I had placed there for that purpose, whenever the furnace was in operation.

On this day, however, he had remained out in the middle of the floor for some unknown reason, and in following the track of the handrail, my foot came into violent contact with his soft body. With a yelp of pain he jumped into the air and in the next instant there came the most blood-curdling shriek I ever want to hear from animal or human. I looked toward the white ball of fire that was my furnace and saw it eclipsed for a fraction of a second. To my nostrils came the smell of singed hair and burning flesh and bones.

I flung open the switch that controlled the furnace and pulled the helmet from my head. But too late, "Follower" had been incinerated. But what was that? I snatched up my bino-vaposcope. Even as I looked a tenuous, yet tangible thing of vapor rose from the furnace and streaked up toward the ceiling and floated on through the roof of the cabin as if it had been nothing but thin air. I ran

outside to catch a last glimpse of the ionized substance of poor "Follower" before it disappeared toward that father of all our heat, the Sun!

Feverishly I built a larger furnace and went to some farmers beyond the hills to purchase pigs and rabbits and lambs with which to feed the hungry fires. After many discouraging failures, I finally succeeded in devising a hood over my furnace, which would effectively confine the vaporous reincarnations and enable me to study them.

The first subject was a very much frightened pink-eyed rabbit. I had taken the soft bundle of fur into little Margaret, as she lay pale and emaciated in her crib. She cried when I took the animal from her fleshless little fingers. But science can not pause for mere sentiment in its frantic research. The rabbit went into the furnace.

The tremendous heat stripped the organic atoms of their electrons and caused the remaining protons to huddle together into a compact, highly concentrated mass of gaseous matter. My confining hood, of special high refractory earths, held the resultant vapor, although it strained at its prison walls in a vain effort to stream toward the Sun. I examined it closely. As I mentioned before, it was a tenuous thing, having no stable form, not unlike a greatly magnified amoeba, with finger-like extensions waving and feeling out into the air.

Was this thing alive?

I set about to determine that. Now, I might say that I had never doubted that these vaporous reincarnations lived,—not like the hypothetical souls of animals and human beings that are supposed to have an existence in some other world—but in a more tangible form. There are certain primitive in-

instincts—hunger, fear, reproduction, which all creatures possess. My vaporous rabbit moved about under the hood like a caged animal. As I observed it with my delicate instruments, I brought in some green cabbage leaves and held them where the rabbit's senses (if any) would observe it. There was a swift, darting movement and the vapor-rabbit enveloped the leaves. I withdrew them, and they were slightly bruised as if the creature had unsuccessfully attempted to munch on them.

I BROUGHT another rabbit of the opposite sex under the confines of the hood and before the poor creature expired from the hot vapors; it had definitely attracted the first one. The same experiment with other objects had no effect. The rabbit did not notice them. However, a red fox that I introduced caused such a violent panicky movement of the faint gray vapors, that I had to withdraw the animal for fear that my subject would dismember itself in its desire to escape.

The other animals gave the same reaction. I had succeeded! But, at the height of my triumph, occurred one of the greatest tragedies of my life. Louise came into the laboratory, her eyes blind from tears.

"Look out!" I shouted, "that furnace will burn you."

"I only wish that it would" she sobbed, "there is nothing left to live for . . . Little Margaret . . . is dead"

I do not know whether I cried or cursed. I lost track of the days and nights. I did not experiment any more in my laboratory for Louise demanded all of my attention. I prepared the simple meals, bathed her feverish brow, stamped up and down within

the small room like a madman. Much of what happened immediately after has since been blotted from my memory, for which blessing I give thanks to whatever gods there be. One thing alone I recall, so vividly. Three days after, in the dead of the night by the eerie light of my furnace, I cremated the poor remains of little Margaret.

And a week later the cunning chemistry of Louise's body broke down from the blow which had made her particularly susceptible to the action of *bacillus pneumococcus*. She too I cremated, and the gray vapor, that was her substance, left this earth like an enchanted arrow and flew straight toward the Sun where little Margaret had gone but a short time before.

I was weary of the world. A tired, saddened, prematurely aged man. To me had been brought home most tragically the futility of life and its functions. I surveyed myself and fellow men objectively—and that view was not good for me to see.

I brooded for many days, neither eating nor sleeping. And as I wasted away physically, my mind became more and more acute. Through it coursed all the philosophical contemplations of the ages. I learned more of the truly great things in those few days, than I had in the thirty-five years of my previous existence. But then, I was resolved that I was going to die, and is it not the prerogative of the condemned to have accessible to them anything that they might ask for? I asked for wisdom and it came to me.

YES, you have guessed how I prepared myself and walked for the last time to the door of the cabin and looked out. Beyond the hills, rising like a splendid, circular gateway that led toward eternal life, yet

sphinx-like in its enigmatic solitude, was the goal toward which I would soon direct myself. The Sun! What mystery lay in your depths! What profundity!

I took one last look and went inside and warmed the furnace until the thermometers registered 100,000 degrees. For a moment I debated about stripping myself of the protection of my mask. Then I threw it off. For the first time my naked eyes looked upon that awesome pool of unearthly incandescence, and even as they looked sight failed me forever. Well it was that I had provided the handrails to guide me. I impelled myself forward and in an instant I was in the flames!

LIKE a million white-hot needles pricking every atom of skin and flesh and bones, came a searing pain—then a languorous feeling—and a definite instinct that my body was still one unit. Then darkness, a sensation of being sucked toward a far-away whirlpool beyond the confines of the earth. To Spirit Land? I did not know. I did not care. Only to be free, unburdened, and less moody, perhaps a bit more happy than I had been for many days past.

For a period of time I was enveloped in a haze of semiconsciousness. Then gradually my faculties returned. And with them came the realization that to me had been given the wisdom of the universe. Yet so far removed is that great knowledge from the material things, that the poor dwarfed minds, of you who are still of the earth, would be lost in the outermost fringes. So I will not attempt to convey it to you.

Ever larger loomed the ball of white toward which I was being drawn, until its flaming whirlpools of gases were quite distinctive. Astronomers

on earth have observed these whirlpools of gases, or solar prominences, many of which were no less than 140,000 earth miles high. Now into one of these whipping tentacles of fire substance I was hurled until I seemed merged with it. (As a matter of information, in place of the senses accorded to earth beings, I had acquired a series of consciousness-perception sensations that were a thousand times more accute than the sluggish earth senses). There was no feeling of heat, for had I not been incarnated in a baptism of incandescence? A true son of heat, and of the Sun!

Yet I travelled on, soon reaching the surface of the Sun. Naturally you ask me to tell you what it is like there. Words are such futile instruments. Now if you were able to understand the language of consciousness-perception, you could see for yourself. But I'll try to tell you. First, go out of doors on a bright day and look straight at the white hot mid-day Sun. Then come inside and close your eyes for a long time and you will see a succession of brilliant green and purple and blue spots. On the surface of the Sun you will find all of these colors and many more which you could never classify, flashing with lightning-like rapidity and merging from one into another—a truly beautiful world in its garment of living, moving color. Yes, it is frightfully hot here, yet, as I told you before, I do not feel it. The landscape of the Sun is not a monotonous stretch of level prairie, nor is it mountainous in the ordinary sense of the word. It is undulating, gliding, ever-changing, varying in color with the swift intensity of a whirling kaleidoscope, and in contour like the billowing of an angry sea tossed by a thousand typhoons.

Yet in spite of the turmoil there is an awesome peace. As this world lacks atmosphere, it is unusually silent. All of these magnificent phenomena take place in the vast silence of its immense body. Is it inhabited? Wait!

I almost forgot to tell you. I found my Sun-legs! Now I can move, or rather glide about, of my own free will. The force of solar attraction that had drawn me hither, departed as soon as I came into contact with the surface of this ball of hot vapors. And the locomotion, afforded my body, enables me to move about at incredible speeds. You know that the diameter of the Sun is some eight hundred and sixty six thousand, three hundred miles, yet I can circumnavigate it as quickly as I can tell you about it. Not only that, but I can bore down deeply into its core, of heavy mass of incandescence, to come forth unscathed by my baptism. Still, I can move languorously too, at almost a creeping pace, taking in all the beauty and wonder of my new home.

Like all good things, in time the magnificence of the Sun palled on me. Then I became unhappy again, longing for companionship. Like a lost soul in purgatory I wandered about over the vast stretches of this source of all life. The physical wants of my vaporous being were satisfied. If I needed air, there were the fiery vapors to breathe, if food, there came to me color-matter that somehow satisfied the chemistry of my nebulous body. But the spiritual,—that was lacking.

I decided to explore more minutely the vastness of the interior. Slowly and methodically I moved deeper and deeper toward the centre of the Sun. As the density of the gases increased, I found it more difficult to travel. Vast caverns, gorgeous in their iridescence opened before me. Each of these I

explored with the utmost care, senses alert for the perception of other creatures.

It was in the passageway between two of these caverns that I found him! Crouched down almost under me, so close that I came near trampling him with my body, was my faithful shepherd dog, "Follower"! We sensed one another instantly and we drew close together. Now I had a companion. No longer need I wander alone through the vast solitudes.

It did not take long to see that "Follower" was bent upon directing me toward some definite objective. Had he found something he wished to share with me? I would see.

WE started off. Many weary periods elapsed, (some ten earth years), until I firmly resolved that we had been chasing a will o' the wisp that existed only within the stream of consciousness of my dog "Follower." It was during this time that I made detailed observations of the phenomena known as "sunspots" by earthian astronomers. These are thought to be vast gaps or oceans torn in the surface gases by violent storms of the interior. This is not correct, but instead, the converse of this assumption is the true explanation. Vast segments of the Sun's surface sink into its interior causing the surging of tremendous billows of gases to fill these voids. This is the disturbance that brings about the Sun storms.

And I have discovered why the surface gases sink into the interior, and what is more, how to control this action!

Even as the earth possesses a mysterious force known as gravity, so the Sun has its own cohesive forces that are more electro-magnetic in their

manifestations. They spring from a tiny nucleus within the very centre of this vast sphere of incandescent vapors. Now I have learned (here again earth-thoughts are futile for expressing the involved mathematics and atomic physics required to perform this work), how to insulate these forces so that they can be sent out steadily or only in certain directions and to so vary their intensity, that the most violent storms could be made to rage over the surface of the Sun.

I did not expect to derive any material advantage from this, but a scientific mind is unhappy unless constantly occupied with research into the vast unknown.

Unhappy? Yes, once again I was unhappy. And "Follower" too seemed depressed, as much as a canine could be. Then quite unexpectedly our cup of joy was filled suddenly to the overflowing. In the vast void spaces of the interior, far in the distance we sensed the swift approach of two grey nebulous shapes. Swiftly we flew to meet them, and they too, sensing our presence, came with the speed of light toward us.

Could there be happiness greater on earth than this, when I clasped my wife and little daughter to me and we stood there for ages without a word, without a question but drank in the souls of one another? It did not occur to me that it was one of the sweet, inexplicable mysteries of the universe, that here the dead may live again. Forgotten was my scientific approach that should have urged me to trace to its source this most profound of enigmas: Truth to tell, I feared to think too deeply about the wonder of it all, lest my loved ones should take flight on gossamer wings and leave me sad and disillusioned.

Our life is now full; we four have not much to seek in the way of wish-fulfillment. All things, it seems have been granted.

Why didn't we find other beings who might have come to this world from other planets? Or is it possible that we were the only fortunate few? Perhaps. But we concluded that it was decreed that only those who so desired would be reunited on the Sun. For all we know, there might be millions of souls on the vast reaches of this globe; perhaps it is the final destination of all things animate.

Gifted as we are with superior knowledge, yet this we do not know.

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There is one more thing. I decided to communicate with the earth!

This was a comparatively simple task, knowing that solar radiations affected radio transmission on the earth. And even before I left there, many scientists were studying and charting this phenomenon. Now with the control of solar radiations within my power, I could send out a series of code messages with the fervent hope that they would be intercepted, recognized, and finally deciphered.

So I am transmitting my story, with Louise and Margaret and my dog "Follower" grouped around me, enjoying the iridescent play of colors and drinking in the fulness of our new life.

I only wish if this message is understood that it be answered. Will there be anyone possessing the courage to go to my cabin and there trust his future life to the furnace that will bring him straight to the Sun? If such a brave soul exists, he will find the cabin back in the hills. . . .

THE foregoing are the pages found in the laboratory of Jefferson Collier, Ph.D., Professor of Astral Physics at the University of Seawahnka when he suddenly disappeared without leaving any further trace of his destination.

His colleagues, reading the strange manuscript were inclined to think that the unusual amount of study and concentration, he had been doing on some mysterious research, had so affected his mind that he penned this weird document, then suffered a lapse of memory and wandered off somewhere. They felt sure that he would be found soon, but when no trace of the missing professor was discovered after two weeks, they became truly alarmed.

Then they carefully examined the strange electrical apparatus which he had installed in his office, and even operated it. Clearly they could hear pulsations that could easily have been interpreted as signals coming from somebody out in cosmic space.

Now the cry went out to search for a cabin in the woods in the northern part of the state. But the police, ever lethargic, even in cases involving the actual commission of crime, were in-

different to the frantic appeals of the Seawahnka University faculty, and did nothing more than promise immediate action.

So it was that time dragged on and the case was forgotten until a wood-cutter, foraging through some dense wilderness, was suddenly struck senseless by a terrific explosion. However, before he lost consciousness, he saw a pillar of fire, like a shaft of white marble, stream straight up into the sky.

When he regained his senses he screwed up enough courage to investigate. He soon came upon a clearing where he found the smouldering remains of a human habitation, with twisted metal that might have once been intricate apparatus, still red hot from the terrific fire. There was no other means of determining whether or not any human being had perished in the catastrophe, as there was no trace of bodies.

Only a charred bit of paper fluttered on the ground, on it were the words, "... and by following these instructions carefully, you can learn to operate the super-atomic furnace in my woodland laboratory...."

THE END

DISCUSSIONS

- The pages of AMAZING STORIES, devoted to the letters from readers, have been always a highly appreciated part of the magazine. The object of this notice is to express our desire and hope for more letters from our readers to be printed in the section of Discussions. We shall make a special effort to give such letters early publication. We must rely on our readers to contribute to these most interesting columns.

When the Top Wobbled

By VICTOR ENDERSBY

Our earth rotates like a gigantic top around its axis. A top acted on by some forces wobbles. The Platonic year of over twenty thousand of our years in duration is based on the precession of the ecliptic. For this earth is a wobbler like the top. A small group of highly accentuated characters in the story have to cope with the earth's motions, and keep their individualities to the last.

TO this third generation after the Great Shift of 1946, I am transmitting herein a narrative of that event, new to us in human interest. The discovery of two ancient diaries and a letter enable us for the first time to follow through the personal fortunes, the personal feelings and reactions, of a boy and girl of those days. They moreover reveal for the first time the circumstances under which, within a soul-wracking space of seconds, a hitherto unknown man made a choice, dictated a turning of the road for the whole race, of which it was not to learn until this hundred years afterward. To his own generation, Ten Drake would have been a madman and worse, had it known the truth. With the new understanding of to-day, I think that knowledge of it will not detract from his memory, but rather will emplace him as the very fulcrum of our history, whereas to date he has appeared only as an obscure name on the roll of the Survivors. New to us also is the strange, semi-mystic, real origin of the "Warning"....

I will perhaps not be criticized if I translate the cramped, naive sincerity of those youthful diaries into more flowing language, yet couch it at times in the old idiom so foreign to our more serious days. * * *

The progressive break-down of mechanized civilization, which marked that epoch, had been stemmed; but the uprush of hope and confidence which had marked the early days of 1933 had sagged off into a jagged and erratic confusion. The new-born energies of reconstruction had been transformed in part into forces of wrangle, dispute, and conflict. The "New Deal" remained half-born, and idle, impatient youngsters sickened with the deferred hope of beginning real life. With this boy and girl, then, Eden two years later was still soured.

Sitting hunched upon a log, his eyes wandered longingly over the curly head, the softly rounded, slender, brown body of the girl who lay face down on the sand. It is hard to wait at twenty-four! And it is harder still to wait, not in counting off days to a sure fulfillment, but in blank helplessness while authorities pronounce, demagogues froth, and savants tediously refute one another with complex platitudes.

Like thousands of others of their kind, fallen under the harrow of the infinite stupidities of their elders, these young lovers waged untrumpeted war against the disintegration and temptations of the hollow days. But women have been trained to patience through the ages, the hereditary



Abroad, Europe, seemed hanging hopelessly on the brink of a downrush into a near Dark Age; fighting broke out in the Balkans and Germany fell into the horrors of a Communist revolution.

bracers of the male spine down the centuries; and the new foe of mass-idleness did not find them wholly helpless.

She reached up and placed her hand on his knee.

"Ben, what good does it do to let it get you down like that? You got out of yourself for a while, when we came."

He lifted the brown hand and kissed it.

"I know. It's foolish to get to thinking. But gosh, girl, it's a disease. It's—it's like a fog. Even the sunshine seems a shade darker than in 'twenty-nine. When I get out alone here with you—with you—so close and so—so sweet—it just seems to aggravate the fact of how different it is from what it ought to be. Why, Eileen, I'm two years out now. If things hadn't gone haywire, we—we would have been married now." The last words fell in a low tone, almost reverently. "Well, darling," said Ben, "it's been a punk day. Shall we be starting?"

They came around the rock which had hidden the shabbily neat little car.

"Oh!" said Eileen.

Ben's remarks were more to the point. The car had lost its spare tire. Someone had seen it from the highway, and the tracks were visible where a woman had watched them from behind a rock while a man had committed the theft on the car.

"Pretty damn cheap," said Ben, "swiping that old worn casing!"

"Maybe they were hungry," said Eileen commiseratingly.

"Not too hungry to buy gas!" snarled Ben.

As they reached the road, they came upon the discarded casing, which had been wrapped with pieces of rubber and wire to hold it together.

"I'll bet they *were* hungry," Eileen commented over this evidence.

"No hungrier than my poor old Dad will be by the time he buys a new tire," remarked Ben savagely. "Well—that's it, exactly. Starving on wheels. That's America—we—U.S.A., where a grown man can't take his girl on a picnic without cutting into his old man's food budget for gas, and then gets tires swiped. Oh, for—" His remarks grew both incoherent and unprintable. "I wish something would just bust up the whole damned works—"

He suddenly staggered violently against Eileen. Seizing one another, they did an involuntary dance by the roadside, while several passing cars weaved about violently; one dashed half its length up a bank while the white-faced driver swore inchoately. The indescribable crackling roar of an earthquake filled the air.

"Gosh," said he, "that's about the worst yet!"

"Well," said the girl, "you asked for it. Look!"

A CRACK two inches wide ran from the edge of the embankment diagonally across the pavement; the north side had sunk an equal amount, and the crack had run up the high bank, following an old fault line in the rocky hillside, from which now emerged the dusty, fiery smell of friction-heated stone.

"Well—it's started to split," laughed Eileen, somewhat shakily. Even a month of sporadic earthquakes does not get one quite accustomed.

On the way home the peaceful, pervading red of the sunset on the beach-road began to cast its soothing, uplifting spell, suggesting Elysian heights out of time and space, beyond the red-and-gold stratifications of the west-

ern ocean clouds. Eileen raised her head from Ben's coat-sleeve.

"Ben, I dreamed about the top again last night."

"You *did*! The same thing?"

"Yes—just the same queer little meaningless dream—a top beginning to slow down, wobbling and wobbling more and more—and that terrible, suffocating feeling toward the end, as though the last wobble would mean something too awfully horrible even to think about. And then I woke up again."

"That's the third time!"

"Yes. Ben, I—I just feel that it *means* something."

"Well, three in a row is 'kinda' queer, no getting away from that."

"Let's talk to Ten Drake about it." (It never occurred to these two to do anything separately, if they could help it.)

"Good idea. He ought to be up on this psychology stuff if anybody is."

"Ben."

"Yes."

"I've been thinking."

"Oh—oh!"

"*Will* you listen? What I mean, I've got an idea about licking this depression—you licking it, I mean."

"Oh, yeah?"

"Well, it's like this. Suppose you felt that you were doing something really useful for people . . . well, it wouldn't matter if you got paid for it exactly—you'd feel somehow that you were keeping your end up, wouldn't you?"

"Yes . . . guess I would. Such as what, for instance?"

"Well, there's your dad, and the Institute, and laboratory, and your Bachelor's degree, and God knows what, all kinds of things, you know, research and all that needs to be done yet. Couldn't you boil all that up

somehow together and cook yourself a job?"

"Such as inventing more machinery to put more people out of work?"

"No! Maybe finding out some way to make the machinery we've already got, work for people instead of gobbling their jobs."

"Me compete with the Technocrats and the Brain Trust? Hah, hah, hah!"

"Well, then, find out what's shaking the darn country around this way! That's more in your line anyhow."

"It isn't only *this* country."

"Well, the world, then!"

"The Profs. haven't gotten very far with it!"

"They haven't tried. They just take it for granted that it's just another of those earthquake cycles, and they *hope*, some day, that the science of seismology will be developed to the point where prognostic possibilities will emerge!"

"Migawd, girl friend, what've you been reading?"

"Ben, I—well, I don't know how to tell you how I feel about this thing. It's like a—like a dark cloud in the back of my mind—like a great deep voice trying to tell me that something awful is happening, and to hurry, hurry, hurry!" Her voice rose shrilly.

"Steady all, girl! Steady all! Gosh, you *will* have to be 'psychied' yet!"

"Ten doesn't 'psych' people!"

"Thank God for that. I'd hate for *him* to be the kind of pain in the, uh, neck that—that—"

"Don't remind me of it, Ben. I still feel a little slimy when I think of what *he* almost got me to fall for." It was an unpleasant reminder. Ben's brows contracted in a somber silence.

* * *

"But, Dad, there has to be a logical reason for *everything*. Your own science swears by that."

"Yes, Ben, that's really a sort of scientific faith. Certainly we have found a logical reason for everything we have been able to understand. But the logic of the event sometimes lies so far behind the happening that we cannot hope to reduce it to reason in a lifetime, if ever. And this idea of yours of trying to reduce seismic and volcanic action to a systematic mechanics of the globe involves the whole of something of which the combined geologists and seismologists of the world have only gotten tiny fragments here and there. No, Ben, I'm all for this idea of yours of filling in your time with research work, and I'll certainly help you line it up for a doctor's degree, if you will pick something that isn't a blind alley. But this business is too much for you—your geological training is too elementary—you can't hope to cope with something that is beyond the men ahead of you; and if you *don't* cope with it, it's just that much wasted time, leading nowhere."

"Well,—uh—I'd like a few days to think it over, Dad."

"All the time you want. But don't be foolish."

What with one thing and another, Ten Drake was kept busy the evening of that interview when he called as usual at the Seiverson house. Drake was a lean professor of philosophy in the late thirties, saturnine in a kindly way, with silver threads at his temples. His colleagues had a whole-souled admiration for the penetrating versatility of his mind, but deplored his eternal tendency to pursue attracting byways and side issues in lines of research, which were none of his business, and which consumed time that would have brought him far greater advancement if spent on some one specialty. But Drake had his own criterions of scientific values.

"Sure, Eileen," said he upon this occasion. "I don't think there's a doubt that your dream means *something*. But what? There's a symbolism in dreams—especially repeaters. But every man has his own symbolism, and it's infernally dangerous to interpret these ciphers in somebody else's language. Many a man has been landed in an asylum doing that."

"Well, Ten, have you any suggestions?"

"Only one. Get in the habit of going to sleep with your mind in a placid condition, but with your will set toward remembering that particular dream more fully if it comes again. You might find added next morning some little, infinitesimal detail that would give the game away—but don't jump up abruptly when you wake—"

"No chance," murmured Ben *sotto voce*—"Don't jump up or begin thinking about something else, but just try to remember—not strainedly, but calmly and collectedly."

"But," said Eileen, "I generally go to sleep thinking of—I mean—thinking of something else."

"Well, just forget about him for a few days." His eyes twinkled.

"Well," smiled Seiverson senior, "now that you've got *her* psychied, I've got a little job for you myself. Would you mind stepping into the study?"

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"**I** DON'T take that view of it," said Drake half an hour later. "You know yourself that an amateur, whose mind is free from the strait-jacket of specialism, sometimes can see more directly to the point, than those whose minds are loaded with conventional theories. And God knows that if there is any science yet in its infancy, it's seismology."

"But to throw away three years on

a wild-geese chase which can only lead to a doctorate by one chance in a hundred!"

"Granted the one chance in a hundred. But the boy's throwing away—worse than throwing away—his time *now*, isn't he? If I know Ben—and I think I do—he'll be bunked in a box-car or out on the road with his thumb pointed east one of these days. Do you want him to join this horde of wandering timber-wolves which is accumulating from the young fellows who've never had jobs? Anyway, how do you know there'll be any Ph.D.'s being passed out three years from now? How do we know what they'll be worth in whatever new society rises from this chaos?"

Dr. Seiverson waved his hands helplessly.

"Oh, all right. I'll do what I can to help him along in any direction he wants to take."

"Not too much help," warned Drake. "Too much help in the past years is what has been wrong with all of us—given the whole damned country the hitch-hiker and Messiah complex. Waiting to be lifted in the direction we ought to be walking in—hoping that somebody else can do our walking for us, our thinking for us—by God, even be honest for us!"

Seiverson laughed.

"I'm afraid it's about true. But what can we do about it?"

"Nothing!"

MONTHS went by. Ben, studying around the outskirts of seismology—as a cooper goes around a barrel, at times almost concluded that there was no foundation for a science of earthquake epidemiology, and that he had best turn his energies into more orthodox channels. The quakes which had shaken the world tapered

off to normal, leaving a few ruined cities in the Mediterranean and the East Indies, cleaning out the last of the poorly constructed buildings of the United States, and for once, getting the latter country thoroughly sold on earthquake-proof construction. Seismologists began plotting up time-curves of earthquake frequency; none of them could have explained just why. Social acrimony grew more intense; major food-riots in some cities were countered by tax-strikes as the burden of relief grew heavier. Then Eileen dreamed again. Next morning she sought out the discouraged Ben in the laboratory.

"Ben, I got things clearer about that dream!"

"You did? Shoot!"

"Well, you know I'd been determined for months that next time I dreamed I'd try hard—awfully hard—to remember that I was dreaming and look around at things more while I was there."

"That's dumb. Whenever you realize that you're dreaming, you wake up."

"But Ben—I *didn't*!"

"Didn't wake up—and knew you were dreaming? Why—I say, Eileen, that is something new! What did you get?"

"Well, I thought I examined the spinning top, instead of just looking at it in a dumb, futile sort of way as usual. Then I saw that it was a *very* queer top. It wasn't spinning on anything."

"What do you mean, not spinning on anything?"

"Well, no floor—no anything. Just blank space all around it. *Blue* space."

"Queer. Was that all?"

"No. It was tipped over, if you know what I mean."

"You mean it was spinning leaning over?"

"Yes."

"How much?"

"Well—" she demonstrated with a test-tube.

"About twenty-five degrees—um—well Was the wobbling as usual?"

"Not quite. It would wobble for a while, then steady down. Then it would wobble again. And every time I'd get that awful sinking feeling of terror. And the feeling that somebody must be told, something had to be done. And this time—you were all mixed up in it—you were the one that had to be told."

"Well, a psycho-analytic sharp would find *that* part simple."

"No, Ben, there's more to it than the—the way I feel about you. It was bigger—awful—well, sort of cosmic, if you know what I mean."

He began to laugh.

"Well? What's the comedy?"

"You—you going cosmic. You look so serious with those great big eyes—by George!" His eyes dilated as they caught an object resting on a shelf across the room.

"Now what?"

"Listen—I won't say why now, it would influence you—but you keep up that dream stuff; try to see a little more—try as hard as you can next time. Maybe it *is* cosmic!"

"Well, that's something, anyway. But I wish you'd—no, you mustn't, of course."

But it was a month before Eileen saw in the blue again; during which Ben struggled on many a weary, insomnia-shot night; with some slippery, inchoate idea which persisted in haunting him, but refused to unveil itself Ten Drake called attention to the unrecognized part which

dreams and queer coincidences had played in many scientific discoveries; Dr. Sayce's vision of the Babylonian priest, for instance, and the odd chain of accidents, which brought about the discovery of radio-activity in '97-'98. They both felt that more mysteries were stirring in the curly little head of Eileen Gilders, than could be easily fitted into the ordinary scheme of things.

BEN sat up swearing incoherently one dark midnight as the phone bell downstairs snatched him from a weary drowse. He got into his slippers, and, dragging a dressing gown sloppily about him, answered politely, but with some effort.

"Oh—Eileen—why, what tha—"

"Ben, I've got some more—quick—get a pencil while I remember everything—it's pretty complicated"

Ben scratched industriously under the dim hall light.

"Spinning in the blue again—yeh—wobbling at regular times as before—yeh every *fourth* time? yeh never mind if your heart did nearly stop—it didn't then finally settled down to spinning straight up never did *that* before, did it? Say listen, if you're that paralyzed why don't you come right over? Huh, you've got more clothes on than you wear in the daytime, right now—oh, more? a what? Magnet? just out of space closer each fourth time? yes, I got that that's all? Of *course*—right away—I'll let you in the back-door—I won't be sleeping any more anyway—only for God's sake leave that mill down the block or you'll have the whole family up."

Ben stumbled to unlock the back-door, abstractedly making a pot of

coffee while waiting Toward morning he removed his feet from a bowl of hot water and a wet rag from his head, gently picked the slumbering girl off his shoulder and carried her down to the parlor couch where her presence would look better in the morning; thereafter tumbling into his own bed for a fitful, haunted slumber, leaving the confused piles of paper on the table. He had worked at pressure through the eerie hours, his brain spinning under the drive of the mighty ideas which had connected themselves into a single focus somewhere among its cells. But it was weeks before the story was complete Then—

Seiverson Senior looked up from the neat rows of calculation, his face white but showing something of academic exultation.

"You have it, Ben! Not a doubt of it! That magnetic space-frame—the periodic concentrations—the gyroscopic index of the ecliptic—it covers it; the ice ages, the crustal foldings, sunken continents—Atlantis; everything, everything! But God, boy, how can we get the index point? It's vital!"

"Dad, I think I have the index point."

"Then why don't—Ben, is it as bad as that?"

Ben nodded silently.

"Well, you might as well let me have it."

Ben laid down a fresh sheaf of papers. "I derived it from this last cycle combined with a weighted graph of the historical seismic epochs. As you see, while the planetary conjunctions won't integrate into the primary calculations, it is essential that they back-check. They do—unfortunately."

After a few minutes of close examination Professor Seiverson slumped

down whitely, staring into vacancy. After a while his lips moved stiffly.

"Ben, I—I don't know whether this is a good thing you've done or not. Perhaps it would have been better not to know."

"I don't think so, Dad. It's terrible, of course—but think—to be alive, kicking, and observing in the middle of a cosmic major operation! What a change from this last five years of dragging, dragging—going down and down!"

"Alive, yes," muttered the Professor. "But how long?"

"Well, at least four months, Dad. And who knows after that? *Some* will survive; they always have. And why not we?"

"True, why not we? But you know, Ben, there is something more to life than biological survival. Environment is part of it, a part of all your human reactions, the fibre of your very life. Your mother and I—why, we might as well move to Mars!"

"It doesn't strike *me* that way, Dad. It's like—well, it's like moving into a clean, new universe—if we live through the move."

"Yes—you would see it like that—you and Eileen. The blood of youth makes its own universe."

"Dad—this means the old things are gone. There's nothing now between Eileen and me, is there?"

"Nothing—for as long as you live," his father replied grimly. "In fact, I recommend that you delay marriage now as little as possible. It's a pity—a great pity—all this time" He forced a smile. "I'm old now myself; but I've got a pretty good memory That means they'll have to know I wonder I wonder if *anyone* ought to know."

"There's a question, Dad, where your special knowledge of crustal

mechanics comes in. *How* bad will it be?"

Professor Seiverson rose and began pulling down reference books

IT was the third night following, August 5, 1944, that the first announcement was made. There were present Professor Seiverson, Ben and Eileen, Ten Drake; Eileen's father, John Gilders, a successful industrial engineer of forty-five, with a keenly intellectual face and a clipped gray mustache; Mrs. Gilders, an energetic matron—prominent club woman, and Mrs. Seiverson, a frail semi-invalid with an aneurism, who seldom went out. She alone had had preliminary intimations from her husband, he fearing to inflict the news abruptly upon her. She sat now in her deep chair with oddly shining eyes and the hint of a smile on her face.

Dr. Seiverson did not waste time.

"I have," said he, "an important announcement to make. In fact, I don't think it would be possible to exaggerate how important." Eileen leaned forward, trembling. Her mother looked up with a complacent smile, while her father gazed at his old friend with quizzical curiosity. Ten Drake, leaning against the mantel, grew suddenly alert and listened attentively. Mrs. Seiverson's eyes roved quickly from face to face.

Professor Seiverson coughed embarrassedly. "I—uh—ah—you know Ben has been working for some months along new lines in seismology. I wish to say that he—ah—has found something unique and—uh—in fact of the highest and most serious importance."

"How *very* gratifying!" cried Mrs. Gilders. "I surely hope it isn't *too* deep for us to understand!"

Eileen looked anxiously at Ben, her

hand fluttering to her breast at what she caught in his eyes.

"No, it is not. Er, that is, of course the mathematics are quite complex, but the physical facts are simple. It is this: the poles of the earth are about to swing."

"Good Lord, George," said Gilders, "what kind of a joke is this?"

"But won't that make a great deal of disturbance?" asked his wife.

"It is no joke," replied Seiverson. "And it will make a great deal of disturbance. That is the point of this gathering."

"What's the magnitude of this hypothetical movement?" queried Gilders, smiling.

"Approximately thirty degrees plus an inertial swing braked down by gyroscopic forces until the axis comes to rest with the North Geographic Pole slightly south of the present Magnetic Pole, which is at about Latitude Seventy in Northern Canada, and with the axis perpendicular to the ecliptic, resulting thenceforth in a year of no seasonal changes. Though," he added, smiling stiffly, "few will be there to enjoy it."

"George! Have you gone mad?" cried Gilders, springing up to seize Seiverson by the shoulders.

"Unfortunately, no!"

"Well, what's it all about, who found it out—what's it all mean?"

"Ben—"

"Oh! Cub calculations?"

"No! I have checked them myself—and so's Pidders."

"He agrees?"

"He does."

"Well you might as well tell us all about it. I only hope there's some mistake!"

"You will have to go over the figures and judge for yourself. But briefly, Ben,—figuring along a hither-

to unsuspected angle to which he was led by a curious chain of circumstances into which we need not go—happened upon a framework of the Solar System which has a very definite mathematics and mechanics of its own, explaining a hundred hitherto unsolved mysteries, but most pertinently the causes of the gigantic upheavals and submersions of the past as shown by the elevation of certain strata of the Himalayas from sea level to twenty thousand feet. Its workings are too complex to go into; but briefly every Platonic year, twenty-six thousand solar years—a combination of stresses is produced which results in considerable oscillation of the earth's axis, with some permanent displacement owing to spacial distortion. Every *fourth* Platonic year, or every one hundred and fourth thousand years, an extremely violent oscillation occurs. This is it. Ah—I am afraid I have expressed myself in a rather class-room manner."

"Every hundred and four thousand years—and the race gets a new deal indeed," murmured Ten Drake. "Tell me, George, has the off-center position of the magnetic pole anything to do with it?"

"It is rather the crux of it. The geographical axis happens to coincide with a gravitational space-frame which normally lies in the plane of the ecliptic. Owing to an accumulated imbalance of forces, this gravitational ecliptic is warped some twenty-three degrees, thirty minutes, resulting in the obliquity of the axis. The *magnetic* ecliptic is symmetrical, and the tendency for the gravitational axis to warp back into it is what is producing the accumulation of stresses. The general effect of the cataclysm will be a balancing of forces that will bring the two axes nearly into coincidence and

rectify them with regard to the ecliptic—that is, the plane in which all the planets rotate about the sun, approximately speaking.

"And what a ride that will be!" remarked Drake.

"What a ride indeed!"

"George, frankly, I don't believe a word of it. Your calculations may be correct in themselves, but it looks to me as though they are founded on pure assumptions," said Gilders. "But anyway, let's go into just what it will mean to the human race *if* true."

"I'll get a globe," said Ben. "Incidentally," he remarked, turning at the door, "it was a globe in the lab that helped put me on the trail."

"Here you see," Seiverson pointed out with a pencil, upon Ben's return, "the final latitude of Los Angeles—or where Los Angeles will have been—will be about that of Juneau, Alaska, and the Aleutian Islands. The elimination of seasons will make the climate somewhat like that of the Alaska Coast in late Spring and early summer—*provided* that no changes take place of a nature to direct extremely hot or cold currents against the coast, or provided that submarine upheavals don't place us inland. That means a temperate, rather wet climate, with fogs, rains, and occasional snows to be expected throughout the year."

"Which will discourage the subdividers," grinned Ben, rather forcedly.

"It is impossible to predict the exact nature of surface changes," went on the Professor. "In general, there will be enormous subsidences of the equatorial bulge, which is now maintained by centrifugal force. During successive swings the whole surface will rise and fall violently, and of course be pretty well racked to pieces. The faulted and folded zones will all be-

come violently active, producing whole ranges of volcanoes. Large areas, perhaps continental in size, will rise from the seas in some places and sink into them in others. Great tides, perhaps hundreds of feet high, will sweep again and again about the earth. Changes in land-and-sea-areas will produce violent storms, hurricanes, floods."

Ten Drake walked slowly to the window and gazed into the darkness. "Dies Irae, dies illa . . ." he quoted slowly. "The Judgment Day, when the heavens shall be rolled up like a scroll. It is clear now—too clear. The traditional Flood, the universal, latent expectation of the end of the world—Noah, the symbol of the few survivors of the last time. Just so!"

"You are welcome to fall for this if you want to, Drake," said Gilders. "You always were an imaginative dreamer. But what I find hard to understand is *your* attitude, George. I—well—I don't want to seem discourteous, but I don't think I can be blamed if I find myself wondering a little as to whether you don't need a rest—a good, long vacation."

"Along with Ben and Pidders?" asked Seiverson quietly.

"Well, uh, Pidders—I don't know. But by God! It just can't be!"

"Bigger things than this can be—have been—in the history of every planet. Why should we be immune?"

"But—well—there's no record—why should *we* be—it isn't *right*!"

"It just isn't being done," murmured Ben. Gilders shot him a hostile glance.

"Well, George," continued Gilders, "I am—well, I do respect your word, and Pidders' also. But I don't like this thing; I am going to reserve judgment for further evidence—a lot further evidence. And I don't think you will

consider it illogical if I lay down the law on one point—if this turns out to be wind pudding, this business of Eileen and Ben is *out*—absolutely out. I'll have no son-in-law capable of going off on tangents of this kind."

"Dad!" cried Eileen. "Please! All this—it makes the time so short—we wanted to get married right away!"

"It's up to you, Ben! Prove your case and take the girl! Otherwise—she's still under twenty-one!"

"Well," growled Ben, "you won't have long to wait for proof. And then it'll be too late!"

"Huh? Oh, I forgot to ask when this momentous event is scheduled."

"Next spring equinox is the tip-over," said Seiverson. "The premonitory symptoms should appear in the form of a new earthquake cycle about the first part of February."

"Well—that simplifies it. If a quake-cycle begins in February, Ben can have the girl and what I've got is at your disposal in anything that can be done in the way of Ark-building." He smiled sardonically. "Meantime, I'd like a copy of your calculations for checking. For the time being, that's as far as I'll go. Well, Mary, it's getting late. Come along, Eileen!"

Mrs. Gilders rose slowly and stiffly. Ten Drake noticed that her face was white and as expressionless as that of a statue. Gilders paused at the door.

"I'll say one thing for you, George. If nothing else, you've staged one of the most striking evening entertainments I've been in on. But don't you think it's a little hard on the heart—" he stopped with a slight gasp as his eyes fell on Mrs. Seiverson . . . In the car he sat silently for a moment.

"But I wonder, Mary . . . that would be a terrible thing to spring on a woman in Eugenie's condition . . .

he must have been pretty sure
I wonder"

"Let's get on, John," said Mrs. Gilders faintly.

THE Seiversons found themselves faced with a tremendous ethical problem. What should they do publicly about all this? "It's an awful thing, Ben; it's like reading a death sentence to the whole race. The proportion which can survive is small in the first place; all property and property values will be annihilated in the second; and in the third, the new environment will be equivalent to moving to another planet. Sheer nostalgia, cosmic homesickness, would kill hundreds after the change. You can't expect them to face the prospect of it with calmness!"

"The change is just the part that reconciles *me*, Dad," said Ben. "What an adventure!"

"I know," said his father. "I would have felt the same way at your age. But you boys and girls have no idea of how deeply the old strike their roots into familiar things. Yes—it will be a world of youth—a world with which only the young, and the stronger of the young, can cope."

"As a matter of fact and human nature," said Drake, "not a soul will believe it. You observed Gilders, who has known and respected you all his life?"

"But suppose," said Ben, "we announced that earthquakes would be the premonitory symptom; they'd be skeptical now, but when the quakes come, they'd take a tumble, wouldn't they?"

"Too much of a tumble," said Seiverson. "They'd go insane with the imminence of it."

"Some would," replied Drake. "The majority wouldn't believe, even then."

"If we announce it now," continued Seiverson, "it will probably mean the loss of my position and the total destruction of my reputation—possibly even mob violence. And no one would believe. Then—suppose there *were* some fundamental error—suppose we found ourselves the victims of a mathematical hallucination?"

"It would mean ruin," said Mrs. Seiverson quietly. "Utter ruin. But should we let that influence us in such a thing?"

AS a matter of fact, it *did* influence Professor Seiverson to this extent: "If we delay until February," thought he, "*we ourselves* will at least be certain, and there will be time enough for those who can to escape even then. If we announce it now, and *are* wrong, it will be ruin for us and no good to the rest. If we announce it now, and are right, the onset of the February earthquakes may bring such madness of panic that, through all trying to escape at once, none will." This reasoning prevailed, and it was decided to wait until February, meanwhile checking and rechecking the calculations and planning ways and means of escape. Ten Drake refused to advise. He saw so many dire possibilities in every proposed line of action that he honestly could not make up his mind. He *did* feel a serious disappointment over the fact that his old friend proved capable of considering his own personal fortunes in the matter, but was glad to see that Ben did share in those trepidations. But then, Ben was not old, and had not been so hammered by the vicissitudes of life. Who could judge? Men were what they were. As to Pidders, Seiverson's chief—he was convinced by turns and skeptical by turns mentally, and paralyzed morally. He lived in an agony

of indecision both as to the facts and as to his duty toward them, postponing action from day to day. The mathematical facts, he admitted, appeared indisputable. The utter inability to credit them practically which froze his brain, he admitted to be due intellectually simply to the sort of mental inertia which at one time had led the French Academy to deny meteors and the whole medical profession to scout Harvey's discovery of blood circulation. But he could not, in spite of his self-analysis, overcome the vacillation which later was to cost countless lives.

Gilders slowly came around, to the extent that, while rigidly guarding against any connection of his name and reputation with the thing, he, after consulting with the Seiversons, regarding the probable conditions to be encountered, worked up plans for an "Ark," and quietly assured himself of having the necessary supplies and force at hand for rapid construction. He refused, however, to consent to the marriage, adhering to his original position. Mrs. Gilders went about in a pathetically dazed manner, losing appetite and weight. Her friends wondered "what on earth had come over her," and of course suspected domestic infelicity. Eugenie Seiverson looked into the future with smiling, far-away eyes; unafraid. The boy and girl were perhaps least upset and most compensated by the new excitement; but they grew thin and feverish under it.

Meantime social unrest and hardship over the country increased severely; wholesale store-lootings took place, supplies from the country entered the cities under heavily armed convoy, while farmers prepared their shot-guns to resist sporadic raids from the half-starved slums. The terror and despair which had existed in the

winter of 1932-33 began to raise its head again. Abroad, Europe seemed hanging hopelessly on the brink of a downrush into a new Dark Age; fighting broke out in the Balkans, and Germany fell into the horrors of a Communist revolution. An agrarian war broke out in Russia, and the Chinese, for once united, inaugurated a great drive to force Japan off the Asiatic mainland. A new Italian censorship hinted that in the Boot even the Strong Man had his troubles. THUS ARRIVED February, 1945.

"George," said Ten Drake, pacing restlessly, one night, "a strange thought crosses my mind." Professor Seiverson looked up haggardly from his desk. "There seems to be something strangely *organic* about these new space-frames," went on Drake. "Suppose . . . just suppose, that the mathematical order you have found merely subserves a *moral* order."

"A moral order that periodically insures the destruction of most of the race?"

"Need it perish?" replied Drake. "Why is it that the people are so inert, so sunk in prejudice and convention that we can aid but few by warning them? Why is it that all this could not have been foreseen years ago, and scientific research so directed as to locate the safe places on the planet, to foresee the exact nature of the changes? Is it not because the people load their prize-fighters with gold and starve their teachers and scientists? Why could we not have directed our engineering to the construction of safe refuges, instead of half-useless office buildings and machinery destroying the livelihood of millions? Why could we not have used our sociology for planning a new and cleaner social system under the new conditions, instead

of making the fortunes of the nations footballs for political ambitions?"

"I don't know," said Seiverson. "Why?"

"Just for no reason except mass-indifference to anything but the immediate desires of the flesh. No reason except a constitutional hatred of real thinking, real idealism, real social responsibility. With all our immense material equipment and progress, are we one step ahead of the cave-man in things of the mind? A few scientists, a few artists, a few engineers, a few writers—yes. But the mass—are we even as good as the Cro-Magnon, who filled in time from his hunting by laboriously painting and carving—beautiful work, by the way—on his cavern walls, by the light of pine torches? Is not this periodic planetary house-cleaning, in fact, a provision for giving the race a new start, for weeding out the weaklings, the self-seekers, the sensualists, the sybarites, before all become hopelessly corrupt? Is it not possible that the last Ice Age, instead of being the beginning of modern man, was the obliteration from man's memory of old civilizations unfit to survive, and that this may be another such?"

"But *cui bono*? What's the use?"

"Perhaps this time we shall preserve enough of intelligence, enough of true science, enough of health and integrity, to create a new civilization—a civilization of the mind and not of the belly; a civilization that will be prepared to cope with the next wobble of the top. Isn't there a divine inevitability in the fact that this boy of yours, who saw through things his elders had missed ever since science existed, is more likely to survive than anyone I know—along with one of the finest and sweetest girls in the world?"

Professor Seiverson gazed into space for a moment with his eyes alight. Then he drooped. He was tired and harassed, and all this made his head ache

IT was on February 16th that the first shock came—not violent, but rattling dishes and cracking a little plaster. Reports of disturbances—not serious, but world-wide—came in all through the morning. After lunch Professor Seiverson hurried to Pidders, returning to his laboratory an hour later with a face like a thunder-cloud. "Blue funk," he snapped to Ben and Drake. "Won't make a move 'until further indications appear.' I know what that means—procrastination to the bitter end. And the movement may begin any day from the first part of March on! We're helpless; not a paper would look at it without Pidders' authority!"

"Did you ask about the radio?"

"Absolutely refuses!"

"H'm," said Drake. "*Does Riley, the radio room custodian, know that?*"

At 7:15 that evening, Southern California was electrified to hear the following over the radio:

"KXOX, Pacific Institute of Science, Professor Seiverson speaking. We have a pressing announcement to make—an announcement of the most momentous kind. We ask that all withhold judgment until you hear us through, and that all remain as calm as possible while plans are formulated to meet the emergency which confronts us—which confronts the entire human race. It is well known to all geologists that the earth in the past has gone through vast cataclysms. The forces producing them are still active, and we are about to undergo a planetary change which will vitally affect the lives of all of us. This

change will be due to a shift of the axis of the earth which will cause the latitude of Los Angeles to change from 24° to 57°, which is now that of the Alaska Peninsula. The oscillations accompanying this shift, and which may last for some days, will take us repeatedly into the Arctic Circle, reaching latitudes as high as seventy-five degrees, within some hundreds of miles of the Pole. Very violent atmospheric disturbances and unprecedented storms may be expected. During the latter part of the swinging movement arctic temperatures will develop. Very heavy earthquake shocks, upheavals, and subsidences are to be expected. Tidal waves of great magnitude will be universally experienced. The only advice we can offer is short and simple. Get on high ground. Build strong shelters of steel or reinforced concrete in or on solid ground—rock is preferable—in locations where they will not be filled by flood-waters or mud. Take with you hardy grains, berries, and fruits, suitable for sub-arctic cultivation. Take with you implements for primitive agriculture, plows, hoes, shovels. Take tools for building, all the food you can store, and water. Above all, have thick padded or fur clothing and all the bedding you can crowd in for wrapping while in Arctic latitudes. Keep your heads and have courage. The race has survived similar cataclysms and will survive this! We cannot continue. KXOX signing off."

Professor Seiverson did not mention that he was signing off because Riley, with Pidders at his back, was breaking down the door of the radio station, surrounded by half the staff in varying states of anger, alarm and hilarity.

John Smith, down-town, who had at first sat up alertly, sank back in

his chair with a grin. "That would be some sight-seeing trip," quoth he. "I wonder what they'll pull next? But I wonder how the dickens they worked the Institute in on it? Maybe—by Gosh, I bet it wasn't from the Institute at all! I bet the Radio Commission'll skin somebody for this!"

The Seiversons and Ten Drake got back to the Seiverson home an hour later, all showing signs of wear—and were kept busy during the next two hours answering telephone calls, frightened, derisive, alarmed, or accusatory, as the case might be. The tide of excitement rose next day as it dawned upon people that the broadcast was really from KXOX and was not—so far as anyone could discover—a stunt. The Seiverson's lawn and flowers were ruined by crowds of excited visitors, until a police guard, under a none-too-friendly sergeant, was placed on the premises. The morning papers had missed the announcement; the evening papers, which came out in the morning, finding themselves baffled as to the facts of the broadcasting, remained silent, except the *Daily Intelligencer*, which printed the following:

"Feb. 16—At 7:15 last night the following, announced as from KXOX, the Pacific Institute Station, was broadcast (here followed the text of the broadcast). Readers of the *Daily Intelligencer* will be acquainted at once with any developments throwing light on the real origin or authenticity of the broadcast."

DR. PIDDER was busy all day answering calls and receiving visitors; and neither the calls nor the visitors were of a very pleasant nature. At seven P. M. the air was cleared again for another broadcast as follows:

"KXOX, Pacific Institute of Science, Dr. Pidders speaking. We wish to clear up the matter of the broadcast by Professor Seiverson yesterday evening, which was wholly unauthorized by this Institute. We have delayed explanations, while seeking some means of reassuring the public which would admit of consideration for Professor Seiverson's great services to the cause of science and his fine personal reputation. We are, however, compelled to publish the facts because of the great alarm created. Professor Seiverson's calculations, however unimpeachable from the mathematical point of view, are based upon assumptions as to the time-space framework of the solar system which are wholly theoretical. There is no warrant whatever for supposing that these events will actually occur, and we can only apologize to the public in behalf of the Institute for Professor Seiverson's ill-advised action. Inasmuch as Professor Seiverson used the Institute radio for this purpose, not only without authority, but against instructions, he has been suspended from the staff, pending the next meeting of the Board of Trustees, at which his resignation will be formally requested. Once more, we wish to express the deepest of regret for this unfortunate incident. KXOX signing off."

The *Los Angeles Tribune* next day featured Dr. Pidders' broadcast under the heading INSTITUTE REPUDIATES SEIVERSON BROADCAST, and ran an editorial as follows:
ACADEMIC LICENSE MUST BE CURBED

"The amazing incident of the Seiverson broadcast of the 16th from Station KXOX, forces sharply upon our attention the growth of a new disturbing force in a social system which

is already suffering from enough, and more than enough, hysterical factors. The enormous debt which modern civilization owes to science, and which has of late years placed so many scientists on popular pedestals, has perhaps blinded us to the fact that they, after all, are but human, and, on the human side of their natures, are as much given as any of us to dreaming dreams and seeing visions. The scientist who habitually dwells in a world of abstractions, tends, little by little, to attach reality to mathematical symbols in proportion as his interests are withdrawn from the workaday world. With many of our great *savants* this confusion of realities reaches a point which would be termed incipient insanity in the cases of lesser men. Thus, while the idea of censorship is repugnant to the American mind, the great damage, which may be done by reckless statements emanating from scientific sources, forces us to consider whether we must not require the submission of scientific pronouncements to some group of intelligent, but matter-of-fact, hardheaded business men, before permitting their publication. The incident of the 16th, added to the Technocratic craze, brings sharply home to us the fact that should the liberty and respect heretofore accorded scientific opinion be further abused, some form of regulation will no longer be an indicated desideratum; it will become a necessity. That really enormous harm did not result from this *faux pas* is due to its vigorous repudiation by Dr. Pidders; a vigor somewhat detracted from by the unexplained lack of promptness exhibited by him. It is hoped that upon the next such occasion should one unfortunately occur, the head of the Institute will exercise more decision."

THE journalistic war which this opinion set on foot between *The Tribune* and some of its traditional enemies grew to such intensity that the badgered Seiversons found themselves happily almost lost sight of. The earthquakes continuing, Gilders made good his word and went rapidly into action, though carefully continuing his policy of secrecy as to his part in the building of the "ark." He was too much "sold" on the cataclysm to take chances on ignoring any possible precautions; but not enough so to dis sever his old connections by taking a public stand with the Seiversons.

The "ark" itself was a simple construction. It consisted of a horizontal steel cylinder twelve feet in diameter by sixty long, with a four-inch gypsum insulation inside. Entrance was had through a hatch in the top, whose hinged cover clamped down with screws and tail nuts. Near each end rose a twelve-inch pipe to the height of ten feet, also protected by hinged covers operated from inside. They were for ventilation in case of prolonged closure of the hatch, and were supplemented by a hand-operated blowing apparatus. All of the space inside except the cramped quarters designed for the two families and Drake, was occupied by food, water, agricultural implements, weapons, ammunition etc., together with a large store of the hardier brands of wheat, which had long been cultivated in northern Canada and Alaska, and some few fruits and berries known to be highly resistant to cold, damp climates.

Provision for navigation, in case the cylinder went afloat, was made by a fin-keel on the bottom, sails, rudder, and a telescopic mast stowed inside. As a boat, the "craft" would be no cup contender, but would arrive somewhere eventually. The location se-

lected was a flat opening on top of the main ridge of the San Gabriel Mountains at an altitude of approximately six thousand feet, not far from the Lick Observatory. (The diaries now enable us to locate almost exactly this historic spot, which overlooks the great plain where once stood Los Angeles and its contiguous communities.) A special section of the cylinder, under a large cover-plate bolted instead of riveted, held a small knocked-down amphibian plane and supplies of gasoline for several thousand miles. It was christened, with grim humor, the "Dove."

Many of the precautions taken proved unnecessary, the one thing which almost brought disaster having been overlooked, and having to be met by the her(ism of the moment.

Dr. Seiverson, during the latter days, sounded out various of his more intimate former colleagues with a view to a larger "crew." He was met either with outright skepticism, or with hesitation and procrastination so prolonged that the idea was given up. Ben had no better luck with the younger generation, although his heart bled at leaving some of them

AFTER the first of March the constant racking of earthquakes became so intimidating—many modern type office and public buildings showing cumulative twisting of their frames and marked internal and external damage—that people here and there began to take thought of the warning; new "end of the world" cults sprang up galore, whose wallings and bellowings echoed from Pershing Square to the Plaza. Toward the end hundreds of persons engaged in a belated rush to emulate the Seiversons with contraptions of

various degrees of crudeness, and worried parties began to appear on the almost inaccessible plateau to study the "ark."

A spirit of abandoned recklessness seized the socially submerged and the elements of low morale; symptomatic of a disintegration of fibre going with a sort of half-belief, half-disbelief in the coming of the end, a hysteria born of the new danger and the hardships of seven years of economic stress. In other parts of the United States they laughed at the warning as a "California craze." In California itself, between the old stress and the new peril, increasing multitudes "let go everything," drinking themselves into stupor or becoming anemic and will-less with other vices. Those who moved energetically to save themselves were indeed the select of the race, men of decision. Of the rest of the world, we still know nothing except for broken traditions brought by wild-eyed, hairy wanderers, occasionally blown across the smoking seas from the fragments of the lands that were . . .

It was actually on March 19th, at 9:37 A. M., that the "shift" began. The members of the tiny community of the "ark," living on the mountain top for some days, were lying or sitting about on the ground or on the little railed platform surrounding the hatch—all except Mrs. Seiverson, to whom the altitude was a severe trial, and who was resting in her cot below.

Eileen screamed. "It's *falling*!"

They had all expected some unique sensation of gravitation or acceleration. But this was terrifying indeed! It was as though the whole plane of the horizon had tilted toward the north, and began to *fall* in that direction. They all experienced that indescribable sensation in the lower organs that comes with the downward

arc when seated in a swing. It was horrifying, heart-stopping.

"Keep your heads," cried Professor Seiverson. "It's quite natural! The actual effect is a slight change in the direction of gravitation, which is followed by the surface of the earth adjusting itself by swinging. California is actually *falling* toward the Pole!"

"How—how long will it last?" gulped John Gilders.

"Only a few seconds. After that the force will be equilibrated and the movement will be entirely inertial—imperceptible but continuous—equivalent to a free fall, until we reach the end of the arc of swing near the latitude of the Pole, when the effect will be reversed."

"Mother!" cried Ben. "Are you all right?"

"Never mind, dear," came from below. "I understand. I have been ready for it."

Seiverson dropped quickly below to look after her. Drake adjusted his binoculars and fixed them on the city below. "Like ants," he murmured; "Crazy, wild, black ants!" The streets of Los Angeles indeed were turning a speckled, torrential black, with individual masses streaming up first one street, then down another and back. The stick had poked the ant-hill! They knew now!

The falling sensation died out. The sky was cloudless blue. They even noticed with wonder that the earthquakes, the low grinding crepitations, had vanished for the first time in days.

"Ben!" gasped Eileen. "What makes it so quiet?"

"Release of stresses," replied Seiverson, whose head reappeared from the manhole. "The forces have had their will with the earth, and nothing will happen now until the globe be-

gins to distort in conformity with the changing axis of rotation."

"How soon? And what?" asked Drake.

"Not very long. And God only knows what!"

Drake raised the glasses again and watched the city, fascinated. From all the foothill towns as well as from Los Angeles, poured black streams of automobiles racing for the mountains. A faint, far-away, multitudinous honking rose through the still air. Quickly, at every junction and cross-road, the little black bugs piled up in inextricable masses, from which littler bugs streamed and again made for the hills. Ten Drake groaned. "Men! Women! Little children! No Shelter, no arctic clothing, no food!" He swore savagely at the calm, cruel sky

THE end of the swing—forty-seven degrees of latitude away—would be reached in about thirty hours. By the end of two hours, as the advance-guard of the hardier climbers began to appear on the fire-breaks and trails near the cylinder, nothing had yet happened. Thirty minutes later two or three straggling parties topped the rise and began to converge upon the plateau. Seiverson and Drake regarded them with tightened lips and contracted brows. Eileen closed her eyes, and tears began to run from under her lids. Gilders went below and returned quietly with a rifle.

At that moment struck the first convulsion—a gigantic earth-wave rippling out from some major equatorial collapse. A low, far roar filled the air. The horizon southward lifted enormously against the sky, with a slow, appalling majesty. The Santa Ana Range and the Laguna Beach hills heaved and danced ponderously

against the sky like mountains on a painted back-drop struck by some careless hand. The cities of the plans tilted, and the giant tower of the Los Angeles City Hall, hitherto intact, whipped violently, scattering tiles, debris, and pieces of concrete wall abroad over the streets like missiles from a medieval mangonel. Its bared steel framework snapped violently back and forth in the air. Then—the earth rose violently to meet the denizens of the "Ark." They were flung kicking, clawing wildly at the ground, floor or deck, while an enormous, howling, grating, roar and crackle sounded all about them. Slowly the convulsions subsided; they rose gingerly to their hands and knees, to see the hillsides riven with fresh scars, while the roar of landslides sounded from all about. A vast segment detached itself from the mountain-side and plunged downward with remorseless deliberation, drowning half Pasadena and spreading far out over the plain. The youngsters stared with frozen expressions. Seiverson buried his face in his hands and shook his head from side to side in agony.

"Look!" cried Drake in a strangled voice. "Look at the coast!" Over Santa Monica and Long Beach foamed and crested gigantic, tumbling heaps of water.

"I've seen enough!" cried Gilders. Gray of face, he climbed with difficulty up the steel ladder, which sought to shake itself loose from his hands, and descended below.

Two or three groups of people picked their way staggeringly across the broken terrain as the shocks subsided, and surrounded the cylinder, clamoring. There were perhaps two dozen. The stronger men among them had carried children. All reeled with exhaustion.

"Professor Seiverson!" panted a gray-haired man who assumed spokesmanship. "Professor Seiverson! Can't you help us—tell us what to do—what to expect? God, man, can't you at least take in some of these women and children?" Seiverson remained silent, his mouth working pitifully.

"Dad," said Ben in a low tone, "we *could* crowd in half a dozen. How can we leave those poor kids to die?"

"But, Ben, who's to pick them out?"

"Some one has to," answered Drake. "I think I have the guts for it, so it might as well be I." He addressed the crowd.

"Men and women, I don't have to tell you that it's impossible to take in more than a few. We will have to select—impersonally—on the basis of fitness. Have you any suggestions?"

A tall, heavy-shouldered young man elbowed through to the front. "Smithers!" he announced himself. "Two Olympic championships, All-American half-back, 1934, good scholarship record, perfect health. How about it?" There was a marked note of confidence in his voice.

"I've known some Olympic champions—but you're rather exceptional; you've very effectively picked yourself—to stay out!"

"Why, you—you—" The candidate was shoved bruskiy to the roar.

"Go ahead, Dr. Drake," said the gray-haired man. "If you're up to deciding, we're abiding by it!"

"The hell we are!" yelled the athlete, from the rear ranks.

"You!" called Drake. "You with the girl!" It was a slender, dark-haired young man with an ascetic face, whose bright, burning eyes watched the ark fearlessly. He stood well to the rear with his arm about a frightened girl.

"I?"

"Yes, you! You can come in if you will leave the girl."

"Never!"

"If it's a matter of leaving out the two of you or two of the children—?"

"Then leave us out!" The girl looked up at him and nodded vigorously.

"Any particular talent?"

"Musician."

"Avocation?"

"Settlement work—New York East Side for five years—just on our honeymoon."

"Come in—both of you!"

The young man looked about doubtfully. "Not if any children will be left—"

"Come in! If we leave children it won't be your fault!"

The two entered, hesitatingly.

DRAKE called to a strong-limbed, disheveled ten-year-old girl who was comforting a tiny boy.

"Little girl! Come here!"

"Please, Mister, won't you please take Buddy? I don't care—" she bravely gulped down her tears—"I don't care whether I go or not."

"Where are your parents?"

"Mama couldn't come any farther. Daddy stayed with her and told me to bring Buddy and see if you wouldn't take us in."

"Climb up!"

A strongly-built woman with dominating features pushed forward, carrying a six-year-old who had howled uninterruptedly throughout the colloquy. She shoved him at the ladder. "There, dear, you just take hold and go right up. The nice man will take care of you!"

"Just a moment, Madam!" snapped Drake. He looked closely at the puffy, overfed features of the child, the eyes

like broken glass, the lines of selfish petulance about its mouth.

"No!"

"Why, you—you *beast!*" screamed the mother. "You Herod! You're condemning my child to death!"

"You condemned him to death—or to jail—years ago, yourself! One side!" The woman was forced away, shrieking spitefully. Drake spoke to a slender mother of thirty, pallid and haggard with the exhaustion of the climb. "What's wrong with your little boy?"

"Hip trouble—congenital."

"Has he any talents?"

The woman bowed her head. "I'm afraid my Ronny isn't—isn't quite bright."

"Madam," said Drake gently, "If you were in my place, what would you do?" She looked at him for a space from tear-bright eyes, then silently withdrew, cradling the child pitifully in her arms.

A well-dressed boy and girl in their teens were called forward. Hand in hand they answered Drake's questions in a quiet self-possessed manner. He waved them into the ark.

There were no more children about, either among the original arrivals or the stragglers who, for the last few minutes had been arriving with curious questions and pleading faces.

"I am sorry," Drake told the crowd. "That is all. We will be unendurably crowded as it is." As they stood dazed, with some beginning to mutter in low voices, a strongly built, squared-faced man with dominating gray-blue eyes stood forth.

"Isn't John Gilders aboard?" He asked.

"Yes."

"Will you please tell him that Adoniram Tegger would like to tell him good-bye?"

Gilders came out of his daze when called up.

"Tegger!" he cried. "My God, Tegger!"

Tegger smiled constrainedly. "God or the devil for us in truth, John," said he.

Gilders turned to Drake and Seiver-son. "Good God, men," he cried, "if anybody goes, this man ought to!"

"Why?"

"Why? why—this is *the* Tegger—chairman of the Emergency Committee, Regional Director of the Industrial Control Board, President of Acme Motors, manager of Russian Relief last year—the best business organizer and emergency executive in the United States!"

"Well?"

"Well! Don't you see—don't you see that this is just the man we will need to reorganize, to build up things again, to get the survivors together, to allot food, to make a government—why, man, it may mean life or death for thousands!"

"If thousands survive."

"Well, hundreds will—even if they don't, Tegger deserves it on general principles."

Tegger spoke. "I'd hate like hell to be saved when women and children are left. Still—there's no use denying that there's truth in what Gilders says. If any great numbers live, I can be of service—considerable service. But I'm not arguing one word either way."

CONSIDERABLE discussion ensued. Finally Gilder's offer to split his own rations with Tegger turned the scale, although Tegger's admission meant the impossibility of all sleeping at any one time, from sheer lack of room to recline in. But it was simply impossible to take another into

the sardine-box which the Ark had become. Gilders cursed himself bitterly for not having made the vessel three times as large. But who could have foreseen this—and after all, what were a dozen or so among countless millions?

And thus did the philosophic Drake exhibit a surprising energy of decision; an energy that later manifested itself in a strange, a terrible direction.

As Tegger climbed the ladder, an angry yell broke out among some of the newcomers. "Now isn't that just a damn capitalist trick for you?"

The Olympic champion turned quickly and spoke to the disturber. Others gathered about gesticulating and arguing. There were perhaps fifty people around the ark now, who began to huddle into two groups; one forming about the discussion going on, and the other, with the gray-haired man as a nucleus, and containing most of the women and older men, withdrawing across the plateau, where they gathered. Shortly rose from them the quavering strains of "Nearer my God to Thee."

The loud talk from the other group sank to a low, ominous mutter, their eyes turning askant toward the ark. Drake, who was watching their faces closely, said in a low tone, "Quick, through the hatch, and close the cover!"

The rush came before they could move. Drake and Ben, defending the platform while the rest got below, remembered that brief, savage fight as a vision of ugly, yelling mouths, mad eyes, clawing hands and swinging clubs, and faces bloodily crushed by gun-butts. As they finally slammed the cover to, a pandemonium of thrown rocks burst against the cylinder. There was a heavy, clanging trample

of shoes over the cylinder; someone was boosted to the open top of one of the ventilation pipes, down which he shouted, throwing down a handful of burning dried grass. As they coughed and choked in the fumes, Gilders savagely threw over a lever. Mrs. Gilders fainted quietly, sagging in a sitting position against the packed legs.

The hammering blows on the cylinder suddenly fell silent. Another long, dull roar filled the air. Cries of alarm were faintly heard outside, and the patter of aimlessly running feet. The cylinder rolled and bounced violently, tumbling the inmates into a wild confusion. There was a sickening sensation of falling, and a crackling roar rose from somewhere very near. Hanging to the jarring exit-ladder, Ben cautiously opened the cover, as the commotion died down. He was amazed to see a great new, smoking rock cliff just back of them. It was some minutes before his dazed brain could take in the fact that the portion of the plateau which held them had slipped downward two hundred feet, leaving them on a great crescent-shaped shelf three-quarters of a mile long.

THE people on the plateau had disappeared, except for a few aimlessly scurrying figures. Rock dust filled the air, and debris was tumbling over the face of the new cliff. A gasp at Ben's side drew his attention to Drake, who was stabbing wordlessly toward the south with his finger. Ben at first thought that Catalina Island was sinking—its peaks were reduced to knolls in the ocean. Then as his eyes fell to the foreground, he saw that a gigantic dark-blue wall stood, seemingly motionless, over the debris of Long Beach and Santa Monica. For an endless moment it stood, then curled

over and broke in a vast cataract of foam, which became a white wall racing over the coastal plain toward the mountains. Compton, Watts, Norwalk, Huntington Park, vanished in turn behind the roaring curtain. It thundered over Los Angeles from south to north, and Ben's mind refused to accept the automatic calculation of its height, which calculation he made as the dwarfed skeleton of the City Hall stood out black and sharp against its foot. Glendale, Pasadena, Sierra Madre, it took, and brimmed quietly against the foothills from west to east as far as the eye could see, edged whitely with a dreadful flotsam. Slowly, slowly, its flow reversed; it sank away from the hills, and roared in a mighty river southward once more to the sea. As though it had taken the last of his soul-energy with it, Ten Drake sagged against the edge of the hatch, following it with bulging eyes. Ben staggered down the vibrating ladder and stared at his father, trying to speak.

"What?" said the latter.

"Tidal wave—two thousand feet high."

"That load on the crust will destroy the equilibrium of the whole region. Something is sure to let go as it recedes."

"Ten," cried Ben sharply, "better get below and close up."

Drake descended the ladder wearily, and sat staring. "All I ask of life now," he said, "is just not to see any more. Dying is easy—but this!" He shuddered.

Ben drove home the clamps rapidly. They sat waiting for an endless time. At last the eastern horizon was filled with dreadful clangor. The cylinder shuddered, banged, rolled and rocked. They felt a sensation of being pitched

skyward—up and up and up. They waited for the fearful reverse plunge downward. Minute after minute passed, filled with a horrible noise of riven rocks. They were pitched to and fro, banged violently against one another, tossed and turned, bruised from head to foot until all their faculties were dead. Slowly, imperceptibly, the horror died away, almost to calm. Again Ben and Ten Drake opened the manhole and looked forth. Except for complicated shattering, the mountains about them seemed the same. But southward and westward, a vast expanse of ooze stretched between the old shore and the water's edge, which was retreating toward the horizon before their eyes. Seiverson climbed out weakly to the air. "It is an enormous upheaval," said he. "The Islands will be mountains when the water has drained off. It was to be expected. This coast has long been known to be undergoing uplift. This has only accelerated the process by some millions of years. Undoubtedly we would find that we were on a gigantic upthrust block whose face is along the main fold of the mountains somewhere Eastward. Other regions will have subsided accordingly. The Mississippi Valley-New York . . . best not think about it!"

Ben shivered. There was a strong chill in the air.

"Where are we now?" asked Drake.

"It is about six. That means nearly nine hours since the swing started. We should be about the former latitude of Vancouver Island."

"Half-way to our final station," said Ben. "If only we could stop there instead of going on toward the Pole!"

"I am afraid that is beyond human power," said his father sadly.

"It is clouding up fast."

"Yes. We may expect torrential

rains within a short time. You notice how soon the sun set, and how far south of its usual position?" Now that they thought of it, they had.

As darkness fell, a few of the inmates mustered up the ability to eat, braced against one another to meet the continuing tremors.

"George," asked Gilders, "how do we stand? Is there anything worse to come?"

"Except for the cold, I don't think so. We will have to undergo many more major disturbances, but I think the worst is over."

FOR the first time in many hours, sunken eyes began to shine with a dull glow of hope.

During that night, Ben's mother passed away. The strain had been too much for her heart, and the aneurism expanded. In reality she had lived longer than she had herself expected. Between recurrent spasms of agony, she said farewell to those whom she loved.

"We have all lived before, and been through these things together," said she. "We will do so again. Nature is violent, but the soul of man is eternal." She sat up, smiling strangely into the dusk. "The last time—it was worse—Atlantis—" with which cryptic words she passed into the darkness.

Toward morning Ben roused from his grief to listen to the roar of a violent rainstorm. Lifting the cover, his hair was almost blown from his head by the swirling wind, and the flashlight shone on what seemed like solid sheets of water. As day dawned, the rain broke into a thick mist. Staggering across the shivering ground, they dug a grave under an overhang of the newly-formed cliff. Returning sadly to the ark, Drake examined with

some concern the mud and detritus which had washed about the cylinder to a depth of two feet during the night. The sunken shelf was getting the drainage from the upper ridges of the mountains. An increase of it might mean burial.

The mists broke, giving them a momentary glimpse of a vast denuded, bare area of yellow wash where the fertile lands and teeming cities of the richest part of Southern California had been. To the South-west, Catalina stood starkly, hugely, against the sky, belted by the old sea-level which marked the line of vegetation far above the dreary, featureless slope of the old ocean bottom. Twenty miles beyond the Island, barely visible, creamed the thin line of the new surf.

The rainfall was already marking out, by little rivulets in the ocean floor, the streams that drain the new forests which now cover the old Continental Shelf. Twenty-two hours had gone; they were in the old Latitude 64, very near the Arctic Circle, and the chill struck to their very bones. A few small, hard snowflakes straggled down from the black and boiling sky.

Within the next hour it was snowing so furiously that a hand could not be seen at arm's length; the wind, driving the flakes with vicious force, screamed and howled about the cylinder. A new peril arose; if the snow were allowed to bank deep over the hatch-cover, the cover could not be forced open from within. It was necessary to open it every few minutes, and shovel the snow from the top of the cylinder. By five, just before an apparent tilting of the earth southward presaged the end of the swing, the situation had become desperate. Eight feet of snow had fallen, banking high about the cylinder. It was no longer possible to keep the entrance open by

shoveling, as this created a snow-funnel out of which it was impossible to throw the snow fast enough, while, when the hatch was kept open, snow slid into it, threatening to fill the interior and making the inhabitants miserable. It was becoming difficult even to keep the ventilation pipes open.

"Dad," said Ben, "why not extend the ventilating pipes, using the sections of the hollow mast, close the hatch, and just let it snow us in? It will melt sooner or later."

"Ben, we were originally at six thousand feet, which has been increased to at least eight. This snow may never melt!"

"Most of it will on the return swing, won't it?"

"We don't know that—we can't take chances. We *must* keep that hatch open or abandon ship." He shuddered.

"How long would we last out in that?"

"A strong man, well supplied with food and wrappings, can last a long time," said Ten Drake. "Suppose we let the cover be snowed shut, extend the ventilation pipes, and let me stay outside to dig out the hatch later?"

AFTER a great deal of argument, in which Drake refused to allow Ben to attempt the feat, because of Eileen, this was done. Drake climbed out, festooned with food supplies and wrapped to the eyebrows, snapping shut the hatch upon a crew trembling with apprehension in a living tomb. He built himself a snow cave and watched the tops of the extended pipes for clogging, which would very quickly end the lives of those in the cylinder. The next hours passed like a nightmare in which everything was unreal except misery. Fortunately, some time

during the night the snow fall ceased, and Drake, tossed by terrific convulsions little less violent than the original, which started again as the shift moved southward, dug his way back inside, and, jammed among the rest, slept in utter exhaustion.

Toward evening of the 21st, rising temperatures and the gurgle of water under the snow ushered in a tremendous thaw. Soon racing water was invisibly scrubbing the sides of the cylinder with grinding pebbles as the surface of the snow fell almost to the level of the eye. The plateau was flooded ultimately with a rushing yellow mixture of snow, water, and gravel, that threatened to overtop the ark. This time Drake, Tegger, and Ben stayed out, floundering in the wash, clinging to the pipes and nearly sucked into the mud, until the next return to high latitudes chilled the melting snow. They then spent a frantic hour digging down to the hatch through mud and gravel which froze as they worked, their breath crystallizing to icicles in the Boreal cold. The wash was later to be ground away by moving ice. On the next swing northward, new snows overlay the remains of the old—and never quite melted. As the earth gradually settled down to her new state, the plateau of the cylinder became a glacial cirque; now ice was to grip the cylinder and carry it slowly, through the decades, down the mountain ravines to the melting point at the glacier's end from which it was rescued in 1988 as a souvenir . . .

It was two weeks after the initial movement that a haggard, battered coterie, barely alive, crawled out from the mouth of a shaft in the deep snow, and gazed dully about at the snow-covered ranges and the ruined coastal plains, now ribbed with glistening streams, where in old times had been

rocky, semi-desert wastes. The ruins of Los Angeles and the other cities had been smoothed over by detritus washed down from the scarred mountains in successive terrible floods, and of the works of man there was no trace visible, even through the binoculars. Yet—Ben waved up to the others in wordless excitement to point out two little black objects moving slowly out from the foot of the mountain, while far eastward, along the foothills, rose a thin spiral of blue smoke. Drake stood wordless, spell-bound.

"Man!" he whispered. "Man, the indomitable. Man, the Eternal!"

Under his feet the once-turbulent earth quivered gently, docilely. Save for the trickle of running waters and the sigh of the wind, there was no sound, other than a steady, low roaring reverberation from the east, the mystery of which they were soon to solve, but which never left the ears of that generation.

They ate in the variable sunshine, and slept the clock around, strength and will slowly returning. Then they dug out the cover over the airplane, which they removed and assembled. Ben took the controls, and he and Drake took off from the hard surface of the nascent glacier, swooped down toward the plains, and explored for survivors. They found them; few, and far, far between; a man here and there, a few intact families, a few orphan children, in one or two spots whole groups of a dozen or more. The whole of California yielded seventeen hundred and fifty-three men, women, and children—in dire straits, facing immediate starvation, but living. Some had survived in cellars and vaults, some in foothill caves too low to be overwhelmed by snow and too high to be filled by tidal waves. Some had lived in frame houses that had

survived the shocks, been out of the way of the roaring floods, and been snowed in too deep for arctic cold to penetrate. Some few, half-mad, had lived almost unprotected from the elements, on account of which they could give no coherent description of the past days.

BUT without the dwellers of the cylinder, all would have starved. Gilders and Tegger, the Engineer and the Executive, became the saviors of the fragment of humanity. The scanty supplies of food which had survived in the stores of mountain and foothill villages had to be located, concentrated, and rationed; the people had to be prevented from decimating the scant fragments of forests for fuel, and from shooting the few domestic animals which had found refuge in the foothills; seed-wheat and fruits, seeds and seedlings, had to be allocated; a rough survey of the remaining portions of fertile soil had to be made. Even at the best, there was not enough food to go around until harvests should come in; a few, weak and selfish *in extremis* as they had been in civilization, consumed their supplies instead of rationing them, would not or could not work, and begged or stole from their neighbors until the said neighbors revolted. After which they took to brigandage, were driven into the hills, and starved rapidly.

Social organization was of the simplest, and temporary, for there was no material for building up organized manufactures. There was no need to allocate land, for there was plenty for all; part of it was foothill areas untouched by the tidal wave, part alluvial deposits left by the waves and floods, part upland plateaus. Men took what they wanted and could cultivate, allocation resting upon personal pref-

erence or who got there first. Such law as existed was like the "miner's law" of 'forty-nine. Murder, which was infrequent, was a venial offense, visited by private vengeance. Theft—which under the circumstances was often equivalent to multiple murder—was a capital crime quickly overtaken by public fury. By the end of two years, it had disappeared completely.

After a month of organizing aid, and distributing the original available supplies, Drake and Ben, with the sanction of the rest, set out with the plane to explore. From the first, they found it hard indeed to indentify the shattered caricatures of what had been familiar landmarks. The peninsula of Lower California they found heaved up into a mighty mountain chain; Imperial Valley became a high upland instead of a sink below sea level, and the Gulf a long narrow, dry valley. But a gigantic slip had cut off the eastern part of Imperial and submerged it; to the east of this stretched a seemingly shoreless sea, above which rose a few scattered islands which had been the Chocolate Mountains and various peaks in Arizona. The mainland of Mexico seemed submerged; and while they suspected that the newly risen land-strip, which was a continuation of Lower California, joined the Mexican Sierras at some point and possibly continued into what had been South America, the improbability of landing places, and a threatening pall of volcanic fumes, deterred them from going further in that direction. Turning north along the great upthrust fault which had split Imperial Valley, they followed it to where it left the old coast near San Francisco.

There are in the world some few sights whose power and glory are such that risk of life is a small price

to pay for them. The giant range of new volcanoes which they skirted, along the line of this fault from end to end, was one of such. Reduced as they now are to sultry bubbleings, we of this generation are hard put to it to imagine what that four hundred mile array of giant flame-pillars must have been like. Those of the former generation who had the privilege of seeing it in its first few years of glory, spoke of it with awe to their dying days. What must it have been from a plane four thousand feet in the air, tossed and tumbled as it picked its timorous way among the roaring blasts? All along this reach, they found the west upheaved, the east submerged. The San Joaquin Valley was an inland sea, across which the dim, rugged islands, which had been the Sierras, loomed through the volcanic haze. A few years later, some half-wild men, who had survived among those peaks, found their way in canoes along the Tehachipi Archipelago, daring the lava flows, risking their skins in scaling the giant new cliffs to reach their fellows.

NEAR San Francisco the new upheaval, narrowing, vanished to the sea toward Alaska. They flew far enough along it to see it dwindle to a wave-washed ridge, on which was no sign of life save the lonely cries of sea-birds. Far northward they glimpsed, through a ragged opening in the volcanic clouds, the great peak of Mount Shasta—a lonely island. A little eastward, Lassen, reawakened to her ancient vigor, though dwarfed in height, sent a towering column of steam and cinder, billowing skyward. In silent awe they then followed the coast southward, inspecting a ragged and scattering, new, coastal range which had arisen, and of which the

Santa Barbara Channel Islands and Catalina were the highest peaks; snow-covered most of the year.

When these explorations were completed, only a few gallons of gasoline were left to them—so far as they knew, to the whole race. They hovered over the plane with sad affection—never to take wing again.

From this point the diaries of Eileen and Ben taper off into a recital of love fulfilled, of the inception of a family, of their personal trials, tribulations, and triumphs in the new life, and of a deep and abiding happiness growing out of hardships met and conquered. Of those things we have literature more than enough from other sources. It is of the second great crisis which arose, with its episode which is new in our knowledge of that generation, and which comes to us in Ten Drake's sealed and yellowed letter, that I wish now to write . . .

The first year—how different must be our seasonless years, measured only by the mild variations brought by the ellipticity of the earth's orbit, from the vicissitudes that were man's lot in olden times!—was a hard and bitter year for everyone, with nearly every thing lacking, that had hitherto been considered necessary. The colony breathed freely, however, at the end of the first harvest. With that, and with fish returning to the rivers and coast, they were thenceforward sure of food, if of nothing else. But in the interim, many, physically or psychologically unfitted for the new life, pined away and died. Among them was Eileen's mother, who after a few months of dazed attempts at new orientation, went into a decline.

By the end of the third year, the barren plains had become rich grasslands under the frequent rains; the domestic animals, carefully bred and

conserved, were taking full advantage of that, and were joined by deer in increasing numbers who came down from the foothills and bred rapidly. Rabbits and game-birds multiplied. Clumps of trees, which had escaped the convulsions, properly forested, were spreading rapidly and being propagated in new areas as fast as seed was produced. Many an ingenious device, individually developed, was making work easier on the farms; leisure time was becoming available, to be spent in hunting—mostly with bow and arrow—a hardy sport in the eternal mountain snows—deep-sea fishing, and the like; art was nascent in the form of carving, painting, and sculpture fostered by teachers who had escaped the cataclysm; and in mass-singing, dancing and drama. No man was idle; no man was in need, and no man was ruled by another or depended for his bread upon another's will. If anyone became too disturbing, some one called the neighbors together and the case was dealt with summarily, and in the main, justly.

Happy with all this, there at last came a shadow of peril to the heart of Ten Drake. The majority of those who had survived, found themselves happy under the new order. But others, never having known luxuries in the old times, or having had too much of them, yearned for the vanished flesh-pots. Angry at circumstances, having no one to blame, they neglected their crops to foregather in futile and circuitous discussions, in the formulation of footless plans whose prevailing note was "If only—." They formed a body called the "Progress League." As it happened, other forces were moving parallel to their ambitions—the minds of Gilders and Tegger. These two were, so to say, out of a job. The preliminary and temporary

rescue, relief, and distribution work being done, organization and centralization perforce vanished as the people scattered out on the land to fend for themselves. Tegger had thus to work on the land as the others did. Gilders' function as an engineer promised to last longer—in fact, indefinitely. He traveled up and down the land training the people in simple engineering principles; in the use of driftwood, poles, scraps from the wrecked machine-shops and garages of the mountain towns, even stones, and ropes braided of cowhide, for the construction of ingenious agricultural machinery. Under his tuition, new marvels in the utilization of simple substances were seen daily; a whole new science of the efficient use of human muscle, of the use of unlikely materials, was developing. Patent indeed was the fact that the unending slavery of ancient orders, of Persia, of Rome, of China, of all the backward lands, had been due hardly at all to lack of materials, but to lack of brains! For not one of those orders had been so poor in resources, and none at all so secure, and ultimately so comfortable, as this promised to be in the end! But for Gilders this was not enough. Its simplicity, its primitiveness, made him feel all the while as though he were playing with toys, making believe with a sort of camped-out civilization, a prolonged, haphazard vacation. He would find his mind wandering to "when—" to when there would once more be roads and factories, radios and airplanes, and he himself would be back at wonted work. Then he would wake with a desolate start to the fact that there would be no "when;" that the very basic materials of which his old environment had been built, existed no longer. For hours then he would lie, sick with the nos-

talgia for whirring wheels, of serried lines of machines, of roaring dynamos. The thought of suicide again and again drifted through his mind. Then one day he stumbled upon a rusty shard of steel, the end of an ancient building beam, sticking out of the clay. Gazing abstractedly at it, his eyes suddenly lit up with a inspiration. With a burning brain, he walked for long minutes across the fields, thinking, planning.

SIX months later, he and Tegger came glowing to Professor Seiver-son. Drake listened in. There had been, explained Gilders, thousands upon thousands of tons of steel, aluminum, copper, metals of all kinds, in the lost cities. It had been scattered, washed into the sea, buried under countless feet of detritus, much of it corroded, and much of it scattered so badly, wherever it might be, that mining it out piece by piece would be a herculean and impossible task. But he had the answer—radiologic prospecting! After much toil, much painful accumulation of materials, he had constructed the necessary apparatus. After months of careful exploration, he and Tegger had located and mapped large quantities of the metals of the lost cities; not abundant quantities, but enough to serve. They had even ascertained the depths of most of the wreckage, and the cost of mining it—in terms of man-labor. And they had a plan—a carefully worked-out, detailed plan. It would mean hard work, dog-hard work, for a large force for many months, at first. Then they would have excavated enough steel, broken it out of the wreckage in which it was enmeshed, for the next step. This again would involve long labor, many months, for the few skilled artisans among the people. It would be

to construct, by hand labor, with charcoal furnaces for heat, metal-working tools. Then would follow the building of a complete oil drilling rig, operated by windmill. While they were reaching oil, others would be building oil engines, metal-working machinery. Next, with fuel on hand, they would mine by power for further metals; they would make tractors to replace men on the farms, and draw them into the new shops to increase production by leaps and bounds. They would next build automobiles, airplanes; they would enter upon road-building, the construction of mansions. On paper they had every step laid down; such and such a force for this, so many men for that; this engine built for easy conversion to use in the next step, that machine so constructed that its parts would be standard for the equipment of the next step; all in order, all planned with the most rigid economy. Far into the future they had looked. At the best, the available salvage was too little to last the growing community for many years; but they would open up copper prospects, experiment with new metals; they would devote part of the precious basic metals to building a small ship with which to explore other lands for ores and other needed supplies. Gilders was enthusiastic about it all, charged with energy.

Drake put in here. "If the ore fields are above water elsewhere, some of the people will be too. What if they want their resources for themselves?"

Tegger smiled. "We'll have machine-guns by then. I don't think any of them will be ahead of us on that! Under the circumstances I think we could arrange to trade with them!"

Drake gazed at him strangely. Gilders started, and a shadow of doubt crossed his face.

"May I see your schedule?" asked Drake. He studied it intently.

"This means, first of all, that about a third of the people will have to devote their whole time for over a year to the work. Most of them are fairly happy as they are, and won't care for it. You have no medium of exchange and nothing to trade them except rather deferred promises. Who will do the work?"

"The Progress League is enthusiastic for it."

"They will have to drop their cultivation, and someone will have to feed them. Even if you had something with which to pay for their rations, it means working day and night, the loss of leisure time, for the others. How will you get them to agree to that?"

"We hope to sell the plan to them with high-pressure advertising. That is where we want you and Seiverson to come in."

"Suppose they don't fall?"

Gilders and Tegger looked at one another oddly.

"We—we have plans for that," said Tegger evasively.

"What system of compensation will you use—communism?"

"No—that's impractical. Men have to work for special rewards or their hearts aren't in it. There will be a differential wage with the highest rewards to the most loyal, the most efficient, the most industrious."

"And Gilders and Tegger, of course, will define loyalty, industry, efficiency, and allocate the said rewards?"

"That's the only way it can be worked, of course."

"Suppose a small minority, say, refused to play—preferred to remain on the land and dig out their own rewards?"

"That depends. If they turned out

to be a bad example, and formed a rallying point for malcontents, they would have to be made to conform. But when we got going, not many of them would care to stay away from the nose-bag."

"How long before they begin to enjoy the concrete results?"

"Approximately five years."

"Then," went on Drake, "your plans call for an almost complete absorption of the population into factories as the agricultural machinery is produced to take their places. The intricacies of your plan call for the most rigid organization and control. Will these people, who are used to working as they please, like that?"

"There is no progress without discipline," said Tegger sententiously. "When they realize that the end is luxury and plenty such as men never knew before—the very realization of the Technocratic dream—I don't think they will mind the means. If there are recalcitrants, the very fundamentals of civilization forbid that they should be allowed to block the progress of the whole."

"All that means government—formal laws and regulations, enforcement machinery. What type of government are you planning that will be rigid enough to operate such exact plans?"

"Well—certainly not the sloppy so-called democracy we used to have. We hope to convince the people that government should be by those fit to govern—by trained executives, technicians."

"To be selected by trained executives, technicians?"

TEGGER felt the iron in this, and stirred uneasily. "Well — we haven't worked out the future details. That will come as needed. For the time

being, Gilders is the only surviving engineer, and I am the only man with the slightest pretense to executive ability."

"God, man, don't you see the possibilities?" cried Gilders. "Here we have everything under control from the very root—no medieval forms, no prejudices to overcome, no messy compromise forms of government, no loose ends, everything ordered, everything regular, everything and every man in place, and a place for every man; an ordered world, a world of luxury, of leisure, of opportunity!"

"Disorder and irregularity are somewhat innate in human nature," murmured Drake. "Some people call it individuality. Are you sure you can fit it in?"

"Oh, undoubtedly it will not all be smooth at first. But as we go along, and people see the results, I think we can convince them of the necessity of extending scientific control into everything. In time we will weed out the unruly elements by breeding and selection. And of course an orderly and regular system will carry its own weight of example. As the growing majority is trained to a truly scientific régime, control of the loose elements will be progressively easier. Well, are you with us?"

Drake and Seiverson looked long at each other. In view of the glowing picture presented, it was queer that Drake's eyes looked rather like those of a man gazing into the Pit.

"I would like to think it over," he said slowly. "Would you care to ride over to my ranch to-morrow afternoon to talk it over?"

"I hardly see what there is to talk over. We've made it clear enough. It's merely a matter now of whether you are socially-minded enough to do your part. However, suit yourself!"

Drake spent a bad night, with many nascent misgivings coming to a head in his whirling brain. In all likelihood Tegger could do it—Tegger, with his great force of persuasiveness, his organizing ability, his command of advertising psychology. He could entice the people off the land with promises of ease and luxury, organize them, regiment them, drive them day and night. Quite possibly he could bring to pass what he set out to do. Then what?

The people, as they were, were working hard; but they were healthy and happy, and above all, independent. The lot was common, and those who were poorly off had only themselves to blame. The creative aptitude of the American people was losing nothing by the absence of factories and mechanization—it was immensely augmented, exercised by individuals, not by a few geniuses and organizers. In time actual hardship would be ended; leisure would come—gradually, so that people could become accustomed to it; the energies which they were now exercising would be diverted naturally by degrees into new occupations, new pursuits, in which they would engage with the full power of initiative and energy undimmed by years of machine routine and sedentary life. Men would be their own engineers, their own architects, their own *masters*, by Heaven! And if the time should come for mass production, for making together things that they could not make separately, they could engage in that safely, because their roots would still be in the ground.

WHAT was the true function of the engineer? To teach men principles, along which to develop their own constructive genius—or to

hog the whole field, lavishing upon a dulled, unappreciative, uncomprehending populace the merely sensual and material end-results, *minus* all joy of creation? Why had leisure always destroyed instead of benefited? Why were the sons of the idle rich? Tegger's ambition was in the end to make them all sons of the idle rich—a traditional menace and pest, from which emerged hardly once in a century the creative genius which some supposed would be unleashed by release from work? . . . Was it not undeserved, unearned, undigested leisure, tantalizing to vice by its very tastelessness?

If they went into factories, they must, in the very nature of things, cease to think, cease to plan, become instantly obedient to the dominating will of Tegger, fitted remorselessly into the meticulous details of Gilder's system. The power of thought, the power of will, must be held in abeyance; ultimately to decay and be lost, as it was being lost in the last days of the old order. And with loss of will, loss of initiative would come, inevitably, insecurity; all must depend, as they had hitherto depended, upon the smooth working of a complex system for their bread, must starve if a single strand of the network broke. Tegger could work it—he and Gilders. But after them? Suppose the regimented and docile ranks could produce no more geniuses of organization—suppose luxury and softness bred out of the race the very qualities which had made their future success possible? Gilder's ambition was to breed docility—that is, lack of initiative—into the very blood of the people. Suppose the best of their ambitions were realized—the new system went on and on with peace and plenty for all; the savor of life is by contrasts; only the thirsty man enjoys water. Sheer

monotony of well-being would combine with the brain-irritations of the waste-products of sedentary and idle living to produce, as they had produced, abnormal and unbridled cravings. Sex madness would come in again—drugs—liquor—drearier palliatives of a dreary monotony. Even avoiding that—would not the time come when a feeble-fibred people would be butchered by an incursion of white savages from overseas, as the will-less, well-fed cattle of the great communistic Inca Empire had crumbled before two or three hundred half-starved Spanish bandits?

And what for—to what end? It came suddenly clear, to his tortured brain in the darkness, that Gilders and Tegger were self-deceived—their altruism, their philanthropy, their desire to see everyone comfortable, were but masks for terrific egotism. To bend men to his will—to see people jump at his bidding—to work the levers of a great, smoothly running, human machine, with none to say him nay; to feed his ego with a vision of himself as the benefactor and savior of the people—that was the very life-blood, the essence of Tegger. Seemingly benevolent, yes; but, once set on a determined road, inexorable, ruthless. To create this Utopia of his, peopled by puppets of his will, he would stride ruthlessly over opposition, sacrifice any insurgent minority—without troubling himself to ascertain whether it really *were* a minority. If necessary, he would sacrifice a whole generation to the future of his dreams!

As to Gilders—*his* joy was in machine-planning, of the use of creative power joyously free from human irregularities and oppositions, passive or active. The power that would flow through smoothly running wheels

would be *his* power, a stream flowing endlessly into the shoreless sea of his insatiable ego. The human element concerned him little, except through the irritation of its irrationalities, its unconformities. He would impatiently drive his powerful machinery across its body if necessary, Tegger aiding and abetting. Suddenly in the darkness, like a vision, rose before him the square, hard face, the domineering eyes, of Tegger; the fanatic light on the ascetic features of Gilders, as they sat side by side on a roaring Juggernaut driving over and through human aspirations, human individuality, human originality, freedom, independence

The men were colossal robbers! Not of money, for which they cared little, but of power; above all, thieves of creativeness, thieves of the birth-right of every man to his own opportunities, his own trials and triumphs, his own failures. It came clear to Drake as it had never before, that of all the precious heritages of man, none was more precious than these rights, these opportunities. The madness that possessed these men was the madness of Caesar and Napoleon; aye, even of Jenghis Khan, mounted now upon cogged wheels and accoutered in chrome steel; they were Lenin incarnate! they were Stalin—they were the whole line of managers, drivers, who had sought to regiment, to browbeat the lost people in industry, politics, religion. They were exceptions even of their kind; they were the spirit of industrialism at its most efficient—and its worst. Of all the engineers of the race, why had Gilders been elected for salvation? Of all the executives—many of them *leaders* rather than drivers—why had Tegger alone survived? It is, even to us, who guard the right of the individual to

creative, necessary work, as the old order guarded his accumulations of wealth, perhaps difficult to say whether Drake did not that night pass beyond the edge of sanity

And Gilders was the only engineer the only engineer the only engineer he fell into a weary, troubled sleep, the phrase beating in his brain like a gong of doom.

WHEN Gilders arrived next day, Drake, emerging from his stone hut, rode with him up a distant, winding arroyo* to where the plains lay stretched before them; and there spake unto him with tongue of men and of angels, for he was fighting, not only for what he conceived to be a true civilization, but to avert from himself a dreadful thing. Gilders listened, glancing up at him from under his brows. Before he was half-way through, Drake knew that he might as well have wasted breath on the stone upon which the engineer sat. Gilders heard him through, pacing to and fro.

"Drake, this sick-brained idealism, this effete worship of the primitive—it was all well enough in the old days, when you were one against millions. Under the present circumstances, it becomes a menace. I certainly would have thought you'd had enough of 'back-to-nature' by this time!"

"You don't understand!" replied Drake as patiently as he could.

"I understand enough! I understand that you're a weak-fibred, neurotic type, without guts enough to fight your way in an industrial world, and so falling for a retrograde philosophy of defeatism! Your kind would destroy everything the human race has accomplished since cave-man

days! You're a menace! I've said it before, and I say it again! You're a menace, and I warn you!"

"Of what?" asked Drake, quietly and coldly.

"Not to go about soap-boxing in this manner! If you're too sick-brained to cooperate, don't hinder!"

"Is that why," queried Drake, "the League in the past few months has quietly traded for all the ammunition first, then gathered in all the rifles so rendered useless?"

Gilders started, and looked at him ominously, his foot in the stirrup.

"You know too much, Drake," he said, mounting.

As he turned his horse and picked his way down the arroyo among the stones, Drake leaned sickly against a boulder. An inexorable inner power pushed him dreadfully on. The unspoken love of the years found expression in a broken groan. "Eileen Eileen!"

Repressing a shudder, he stood up firmly. "Gilders!" he cried to Eileen's father, his hand under his own saddle-flap. Gilders turned. "Gilders! A test-case! The primitive against the modern—bow and arrow against rifle!"

He drew forth the bow and nocked an arrow quickly as Gilders yanked his rifle frantically forth. Steadily, carefully, as a bullet sung past his head, he drew the notch back to his ear. . . . Two days later, upon a far plain, he drew rein and looked long at the snowy mountains under which rested all that had been sweet in his life. He raised his right hand, and turning it, looked curiously at it back and palm. Looked again at the mountains, then reined his horse about and rode steadily into the volcanic haze that veiled the unknown South.

* Watercourse of a former stream.

THE END

Hoffman's Widow

By FLOYD OLES

Up in the vicinity of the Alaskan Peninsula, of all places in the world, there still persists a Spanish name, the Straits of San Juan De Fuca, and in this story we have one of the personalities, a Spaniard, penetrating to one of the little known Aleutian Islands off Alaska.

HALF of Maria, the paternal half, was Spanish. That half of her was grafted on an Aleut-Russian mother-stock by the passing advent, twenty years before, of one Carlos Roderiguez, a vagabond Spaniard, into the sluggish monotony of an Aleut village, a thousand miles West of the Gulf, where a ragged ledge of storm-swept volcanoes divides the bleak reaches of the North Pacific from the bleaker shoals of Bering Sea. Carlos had gone, as uneventfully as he had come, on the fishing vessel that had lain on the beach long enough to repair a ragged hole in her hull, memento of a sharp, uncharted rock in False Pass. He didn't even wait to christen Maria—in fact, he never knew of her—but Nadya, her mother, thought Maria would be an appropriate name, since she had learned that it had been the name of Carlos' mother. Maria's ancestry, casual as it was, is yet needful to explain Maria, and how she felt about Hans Hoffman's death, and what she did about it.

There were two children in rather rapid succession after she and Hans were married by the long-bearded Russian priest at Unalaska. A trip of marvels that had been for Maria, who had never been away from Ilinik; and who was, moreover, eighteen, and pretty, which few Aleut women are.

It was the Spanish in her which made her something of an outlander amongst her people, and something of home and a life forsworn to Hans, who was stolid, blond and German, and loved Maria with a dogged German singleness of purpose. The children were girls, Maria and Nadya, and because their father's palate demanded more than common Aleut fare, they too thrived with him, and grew strong and ruddy, with blond hair, unlike their Aleut playmates. Trapping was good, and Hans in some three years had laid by a stake in gold, well hidden, and achieved perhaps more happiness and peace than is accorded most deserters from the German Navy.

The little house at Ilinik was unlike the Aleut huts about, for Hans was clever. True, its walls were yard-thick earth and rock, like the others, for Ilinik lay between two angry seas, and only earth walls would be wind- and rain- and storm-proof. It had fish drying racks about it, too, and thickly growing grass all but covered its walls. But it was different within, roomy, with many cupboards, such as Hans had learned to make at sea. Wild iris, brought from the hills, grew about it in the Springs, and there were in it endless little things unknown to other village houses, whose owners affected first to despise

them, then one by one sought Hans to learn how they were made. Little Maria and Nadya tumbled about the house in winter, on the beach in summer, pulling the dogs' tails, and throwing stones at the sea-gulls; tame and imperturbable birds, who dodged the stones with a little half-pretense of flying, but actually were not at all concerned.

Spring was not far away when all this occurred about which I shall tell you. The trap-line bequeathed to Maria by her maternal uncle, Duskin, late chief of the Ilinik Aleuts, was a fruitful one, especially when worked with the indefatigable energy of Hans, and deep piles of cured skins filled two corners of the house. Things had gone well with them, and in April Hans and Maria awaited with complacency the arrival of the fur trader, due in May; and, as imminently, that of a third baby, due at about the same time. But this common fund of conjugal felicity, deep rooted though it was, yet was not evenly divided. For Maria's felicity, though she would not readily have admitted it even to herself, was clouded, if ever so little, by the fact of Anichek.

Anichek was Maria's cousin, and with her a joint heir of the old chief, Duskin. Not only had Anichek coveted Maria herself, but in anticipation of the death of Duskin he had confidently planned to acquire at one stroke both her desirable self and her equally desirable share in the meager estate of the chief. To him, indeed, had fallen the chieftainship, which carried with it a power extending even to life and death over the Ilinik Aleuts. But even the power of the new chief could not alter the specific bequest of Duskin to the coal-eyed Maria and her blue-eyed husband. Hans had stood high in the favor of

the old chief, whose wishes still bore with them the weight of Aleut law. Still, the blond brood in the Hoffman cabin were an affront to the new chief, and Maria felt that his outward patience was no proof of resignation. That Hans, bluff and friendly with the chief, laughed at her half-suggested fears, only made them rise in yet bolder relief in her mind. She even tried at times, with an indirection not born of her Aleut blood, to suggest that they emigrate to some distant place, like Sannak, or the Bering coast, where the trapping was better. And Hans replied, half laughingly, but understandingly, by pointing to the growing pile of skins. Beyond a doubt, it *was* a very fruitful trapline.

It was in April that it happened. April is ice-fettered in the North, with just a hint of breaking winter in the air. Salt spray freezes on boat rigging, and must be chopped from decks and anchor chains. "Williwaws," storms of sudden and unutterable ferocity, sweep from North to South for days on end, and after a little calm, start just as fiercely up from South to North. But salmon start to run, and there are days of cod-fishing out along the reefs; the porcupines come out, loosened rocks roll down the thawing hills on sunny afternoons, and wild irises peep up across the treeless hills.

There was a party, under Anichek, going to the cod-banks. Two days, perhaps three, as they had gone before, and Hans was one of them. It seemed to Maria no more than usual, until she learned that Hans was going in the boat of Anichek, with three more, all friends of Anichek. Then, grown alarmed, she spoke to him, and used, to sway his will, such pleas as would have seemed more fitted to the ways of Spanish blood than to

life in the Aleutians. She needed him at home, the baby was soon to arrive, the storms were not yet past their peak, now was no time to grow careless, the fishing would be better in a week or two than now. No word of Anichek, but Hans knew, and grew stubborn, pushed by pride. Should he appear afraid of Anichek, with all the village knowing how things were? Besides, her fears were groundless; Anichek was no fool, and one could not forget that the Commissioner would come from Juneau with summer, and with him would come the Law, of which all Aleuts were righteously afraid, Anichek included. Even a chief cannot take the Law into his own hands, so of what should one be afraid?

Maria, who seldom wept, was weeping when he left, fishing gear in hand, striding to the beach with long strides, the wind billowing his yellow slicker out into a fat pillow-shape behind him.

THREE days had gone, with no word from the three boat-loads of fishermen, when the storm broke, suddenly, in the course of minutes, crashing from the North. Folks hid within their yard-thick walls, heaping twigs on glowing fires, and waiting. There was no fear, for Anichek would lead their men to shelter, and there sit out the blow, grouped on the beach about a common fire, grumbling at the weather, but unharmed. For so it had happened many times before, and so it proved again. Two days of storm, and on a morning, with the coldly distant sun, came the boats. But silent, who on other trips came singing, chanting rude old Aleut songs whose very meaning had been lost for ages. Silent; and Maria, amongst the women, standing on the

beach of black, volcanic sand, her two blond little ones hiding from the wind behind her, knew already what would be, and knew that she had waited long, expecting it.

The first boat drove up the beach, the men leaped out, and old Dorak, who was nearly eighty now, but had been a great hunter in his day, spoke to the first ashore.

"Who is it?" asked Dorak, peering, counting.

But the men in the first boat only shook their heads, and nodded back to the boat of Anichek, still coming nearer, manned by only four, where five had gone. Then everyone knew, and looked at Maria, who also knew, but kept looking, unbelieving what she knew, clutching the blond children by each hand till they cried out in pain. It was a bad dream come close, that would not go away and let her wake.

She made no sound as Anichek told them of the storm, while the men drew the boats up beyond the tide-marks, to the tall grass, and lifted out the fishing gear, and threw the fish out upon the ground. He told it briefly, as an Aleut tells, and with a certain satisfaction. It was a sudden "willi-waw"; but he, Anichek, had led them to safe anchorage, and lost no man but one, the white man, Hoffman, overboard in the first of the squall. No explanation; just the fact that he was gone. He must have stumbled, overbalanced, and before they knew it he was gone. Not one had even seen him fall; they heard a cry, no more, nor even saw him in the mounting seas.

Silent faces, Oriental masks, the three companions of Anichek said nothing, nodding in confirmation of the words of Anichek, moving up toward the village with their fishing

gear. One brought *his* gear, and many fish, and laid them down at Maria's feet, and turned away. Anichek was turning away, too.

"Wait! Wait!" said Maria; the first thing she had said.

Anichek waited.

"Where was it?" she asked. She was defying the half light, like a smile, in his eyes.

"By the Ugaluk Banks," said Anichek. "We were just off the little river mouth, at Ugaluk."

The others heard and nodded. There would have been no need to lie about the place. Maria looked at them, and knew this much was true.

It was the Aleut in Maria that turned her away, silent in stolid grief. It was only the babies, knowing that something was wrong, who were crying, as she pushed them before her, past the others, to her house.

It was Maria herself who told me how she sat at times dully, as one dazed, and could not remember what or how she fed the children, when they cried from hunger; how the day grew dark, and soft, wet snow blew in from the South; how all the day, for hours and hours, she sat and thought, and remembered, and tried to hope that she could wake up and push this thing away from her, and could not; how, slowly, her Spanish blood surged up in a hot wave, and blinded her with a grief-born rage, and she began to clearly think again, and plan—wild, senseless plans, still formless.

It was at this time, she says, quite suddenly, while it was still day, but darkening, that there came before her mind the shelving, black and sandy beach of Ugaluk, beyond the river mouth. It was just a tiny stream, except in Spring, but from it there had flowed, in ages past,

enough sediment to have made, east of its mouth, a little stretch of sandy beach. Here the stream-borne sands, flung back by the sea, had covered the shelving rock for a little space. She could see that stretch of sand, black and foam-fringed, just as she had known it all her life; as clear and definite, she says, as if she stood upon it. And on the sand lay Hans, prone, upon his face, just above the wash of the breakers. She even saw, she says, a long tear in his shirt, below the shoulder, on his back. She remembered that.

Then, she says, a sudden, creeping horror numbed her spine, and she made noises in her throat, and tried to cry aloud, as one does in a nightmare, and could not cry aloud. Something yet more horrible than death, for she had faced that now as fact, was coming, coming, down from the brush above the little beach. It was nameless, but it froze her as no thing that she had known, and she knew that she must go to Ugaluk.

No need to seek a boat; they would not let her go—they would say that she was crazy. It was late afternoon, and cold, and thick with the wet Spring snow, driven by the raw wind from the South. She knew the beach trail to Ugaluk; steep, crooked miles away, but she would go. The babies? Clad in slicker, boots and hat, she sought Nonie, the old woman who lived alone nearest her; and, with fierce threat and admonition, enjoined her to silence and care. She started, but thought first to take up Hans' smallest rifle, a .30 carbine, and set off along the shore trail.

MARIA could not remember all the seven miles; just snatches and pains and pictures here and there. Already overburdened, she soon gave

up the carbine, and left it, leaning within a rock crevice, to go on unarmed. Night fell as she drew near to Ugaluk, and she noted dully that the tide had turned and was coming in—a short sea-tide, that soon might come too fast. Thoughts of the narrow black beach of Ugaluk drove her on, and buoyed up her breaking strength to lift her burdened body over rocks, up hills, and save it on passing down descents. Wet, clinging, snow made slippery each grade, and added peril to every narrow place along the trail, where waves of the late-dead storm still lashed the rocks below. When at length she reached the little river Ugaluk, beyond which lay the beach, it was full from melted snow, and had become in truth a river. Between wading, stumbling, swimming, crawling numbly up its further bank, she came at last out fairly on the beach, Guided still by that nightmare that she lived while still she dreamed, she pushed her worn, bedraggled body over the black sands, to see what it was the snow and mist and tide and crowding dark still sought to hide from her.

She found him, as she knew she would; high, where the last high tide, wind-driven, had brought him from the Banks. Face down he lay, as she had known he would, sprawled out, and his shirt was torn, beneath his shoulder.

And then the horror seized her, that had come to her in the house at Ilinik, and had driven her forth to Ugaluk; the horror of some fate still worse than what had come. She looked up; up at the black rocks that fringed the narrow beach, beyond them to the tall grass and the brush that lined the little river. And it was there! Shambing down, his aim that same still form upon the beach, his great

bulk crushing down the underbrush as he came on, appeared one of that tremendous race named for the island where first they were found—a Kodiak bear.

Maria lunged forward, to be the first. Surprised, the great bear paused a moment, then came on; roused, at sight of her, to that blind ferocity for which his race is feared and hated in the North.

Maria remembered only clutching in her arms the cold, wet body—clinging, clinging to him, trying to scream, hearing no sound. That she remembered—that, and one thing more, which long after she recalled, though unforgotten meantime, for another one to hear.

Blackness dissolved in the dim light of the house in Ilinik, with old Nonie, mid-wife to the village, bustling about; old Nonie, who had not respected the admonitions as to silence, and had sent the men to follow, no more than just in time to drive away the great beast, whom they dared not shoot. So they had brought her back. And Hans was buried in the rocks, above the village, with the Aleut dead; while Maria turned her mind to Little Hans, who was waiting to be born.

IT was Fall. Little Hans lay kicking in the bed descended to him from the elder sisters, who now occupied their time in berry-picking, and in watching the old women jerk caribou meat. The salmon run was over, and trapping months at hand, when Anichek came to her, as Maria knew he would. Still silent in her mind was that other thing that she had seen at Ugaluk, just as the bear came down, and the blackness swallowed her. She had waited, knowing that a time would come.

"Someone must work the trap-line, Maria." She could have predicted the words of Anichek. "It was in our family. If you will share with me, I will work the line for half the pelts."

Maria tried not to be too eager in her quick consent.

"It is a long line, Anichek," she said. "I know it well. I will go with you, the first time."

A light flared up in his eyes, and Maria grew calm, and half content, with the sureness of her planning. Three days away she set the time, and made her plans; a trip alone, as she had done each week for long, and all was ready.

On a clear, cold morning she and Anichek started out, and there were looks amongst the village folk, as they set out, at sight of which Maria set her lips tightly, and black rage very nearly overcame her. Along the trail, toward Ugaluk, and inland by a little water-course, where the summer's growth of grass and brush was lush and tall, and half concealed the dark waters, coldly tumbling down over black rocks. At every well-remembered place they paused, and Anichek, at her bidding, set the traps where she showed him, skilfully concealing them with the art born of long practice. It was in silence that the day went by. If Maria thought of those other times when she and Hans had come this way, she gave no sign, and Anichek was satisfied to have her silent with what seemed a wholly Aleut patience.

At mid-afternoon they came out upon a little flat, near the foot of a black cliff. Here, from the broken rocks, flowed the creek they had been following. Anichek, ahead, stopped suddenly, then wheeled about, and searched the expressionless face of Maria as he cried, a twinge of fear

in his voice, "The bear." He pointed to the spoor, unmistakable. Maria nodded, unconcerned.

"Are you afraid?"

She asked it evenly, as if a bear meant nothing more to her than a passing porcupine. Armed only with small carbines, she too knew that an encounter with a Kodiak must be avoided. Anichek went on, silently, troubled.

It was no more than a few steps, though, till he stopped again, an exclamation escaping him explosively. He stepped back to Maria, and spoke cautiously.

"There has been someone here," he said, pointing to the ground.

"Only the bear," said Maria, but her voice was not steady.

"Bears do not wear boots," said Anichek. He hesitated, then went on, cautiously, looking about.

They set another trap, and came to the creek crossing. Here a narrow ledge of rock led to the middle of the little stream, forming a natural series of stepping stones, from the last of which was an easy leap to the far bank, a shelving beach of gravel. But at the near bank Anichek paused, and looked at Maria, who was breathing in a strange way.

"Someone has been here." Anichek repeated it, like a man who talks to gain time. He was afraid, with a fear that had no name. And at his feet lay a bone, fresh, picked clean, like part of a caribou that a bear might have eaten.

"Maria—" Anichek paused, half afraid to say what was in his mind. "Maria, have you been—?"

The look on her face stopped him, and he stepped back, holding his rifle more tightly.

"Let us cross," said Maria. Her

voice was cold and harsh, and frightened him. Hesitant, he kept his face toward her, stepping from rock to rock, crossing the little ledge. He paused an instant on the midstream rock, still watching her, conscious that she was eyeing him in a way that was horrifying, like an eagle with a rat. Then he leaped lightly to the other bank, remembering too late that this was the only spot in all the trap-line where a foot-fall could be accurately predicted. The hidden hinges screeched, and the sharp, steel teeth of the great bear-trap closed crunchingly on his ankle.

Maria was calm as she recovered his carbine, which he had let fall into the creek in his sudden agony. She said no word as his cry of pain, his futile clawings at the immovable steel jaws, died in a silent horror as he saw her face.

"You wouldn't leave me—you didn't mean it, Maria—Maria—"

His cry died to a groan, for the trap bit cruelly. It was Maria's turn to talk.

"You thought I would forget the beach at Ugaluk, Anichek—and the knife-hole in his back, that you hoped the bear would hide."

"I swear to you, I did him no harm—I swear, I tell you—"

Maria waved him to a cowering silence.

"But the knife-thrust, Anichek. Did you suppose I had not seen, since I was silent? And you made haste to bury him—but I had seen."

She stood opposite him on the bank, and talked quietly.

"You dare not leave me here. I am the chief. They will find me; they will know. You dare not—"

"I shall be sorry, Anichek, that we were separated, and you blundered in the trap. And sorry that the Great Bear found you first, before I came."

"The Bear?" It was a scream of terror, as the meaning of the blood-bait came to him, and the memory of the great beast at the beach of Ugaluk came back.

It was the Spanish in Maria that turned her away this time, back along the trail to Ilinik, and the blond children. Anichek was silent as she passed from his sight along the trap-line trail; outcries would bring the Great Bear sooner. Perhaps those steel jaws might still be pulled apart, the anchor chain uprooted, before the beast should come—

THE END

The Following Stories Are Scheduled
for Our Next Issue

L A B Y R I N T H

By NEIL R. JONES

A MODERN COMEDY OF SCIENCE

By ISAAC R. NATHANSON

INTELLIGENCE UNDYING

By EDMOND HAMILTON

The names of the authors of these stories speak for them better than any commendation in advance would do

“21931”

By J. E. KEITH

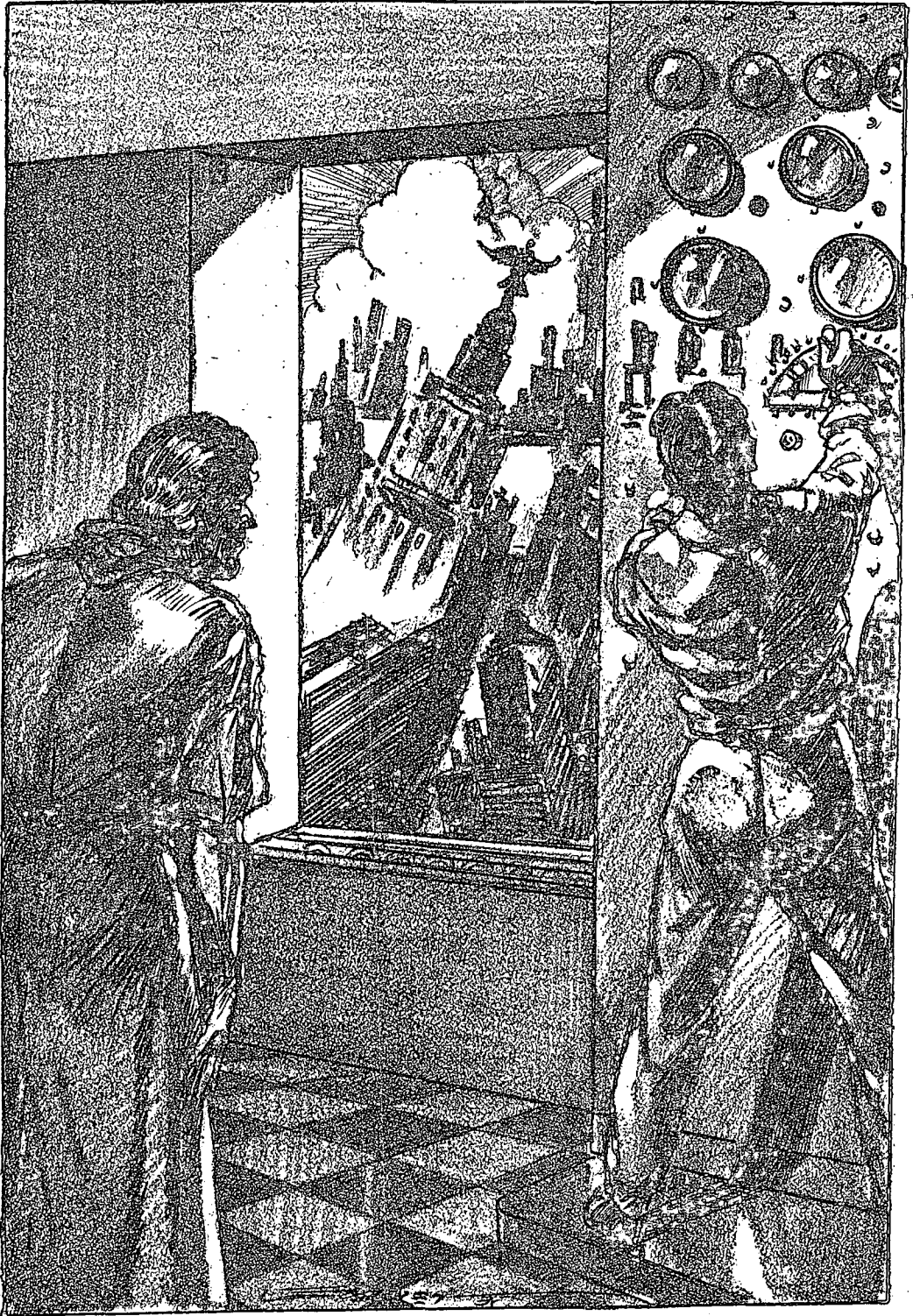
We have had several stories dealing with subterranean populations and the present writer gives us quite a vivid account of the life beneath the surface of the earth and of earthquakes and disturbances on the surface. The author certainly has a vivid imagination. Earthquakes are described bringing buildings to a very precarious angle.

THE morning was fine. 31K07 sniffed the air, and the fresh smell of it was good, even through his filter. He threw wide the door and went out on the balcony that jutted from the wall of his bedroom. The sun was just rising through a riot of pink mist. The earth far below was still and cool and peaceful. And the air was pleasant with the faint distant clamor of singing birds. Stepping to the railing he threw back his shoulders and inhaled a deep breath, and his mouth smiled, and his eyes.

31K07, as he often told himself, was a distinctly old fashioned man. For all that the advantages of subterranean existence were long since proven beyond dispute, with the result that nine-tenths of the metropolis' population had already permanently retired to the underground chambers, 31K07 by no means agreed with that element in the Council that favored making residence in the Buried City compulsory. He liked fresh air—really liked it. What if living underground did add 9.26 years to the average life span? In his estimation 9.26 years was a fair, a by no means excessive, price to pay for the privilege of sitting in the yellow sunlight of a summer morning and taking in the

gorgeous panorama that was spread before him. On either side were the soaring towers of the Old Town, now, alas, almost wholly abandoned in the exodus to the underground city. In front the blue waters of the bay rippled in the sunlight, and beyond the level blue the hills of Devron were a green loveliness, crowned by the vast white pile of the interplanetary beacon station, now also crumbling in empty solitude since the Venerian colonizing scheme had been permanently abandoned.

Sitting there in the warm light 31K07 reflected, as he so often did, on his love of the outdoors, an affection that he had never once discovered in another person. He was, he supposed, a throwback, an atavism. Countless generations of indoor life had bred it out of the race. Certainly his subordinates in the laboratories had none of his enjoyment of Nature, nor any sympathy with it. Only last week their complaint, carefully documented, had gone before the Council charging that his stubborn refusal to permit the laboratories to be moved underground—thus forcing them to expose themselves for a two hour period each day to the evils of unshielded atomic radiation, uncontrolled ultra-violet radiation, varying conditions of tempera-



Looking, 31K07 saw quickly enough. The towers on half a dozen buildings near the western edge of the city were distinctly out of plumb.

ture, pressure and humidity, to say nothing of the grave and constant danger of infection by micro-organisms—was shortening their lives by an average of 914.62 seconds for each day that they were so exposed.

31K07 gave a prodigious snort. Let them complain to the Council, the snivelling rabbits. As long as he remained the Director, the Bio-Genetic Laboratories would remain right where they were, in the building that had housed them for nearly two thousand years. If his precious young men were afraid to so much as poke their trembling noses above the ground, they could get themselves transferred to different work. Or they could go sit on a tack! And what was more, when the weather was nice he would have the windows open!

He threw back his robe to let the sun play on his wrinkled old hide. They could talk all they wanted to about the superiority of controlled short-wavelength radiation; he preferred sunlight that hadn't come out of a machine. And after all, wouldn't it be better to enjoy the simple pleasures of the senses, all of them, even if they did shorten the life span a trifle? He made a face as he thought of the numberless inflexible rules of conduct whose rigid pattern had controlled his life. What earthly sense was there in striving with such incessant earnestness to live to the last ultimate possible moment, when the very terms of the struggle itself made life so unbearably dull. Primitive men had known better. They had not only accepted the many agreeable sensations that Nature offered, they had purposefully sought them out and enjoyed them. They had taken pleasure in all sorts of things: in the beauty of earth, and of women; in physical exercise, the use of their bodies;

even in the ingestion of nourishment.

31K07 was uniquely able to appreciate the delights of the latter, for he had been born with the ability, utterly unknown among his contemporaries, to taste. To others all substances whatsoever were as tasteless as the concentrated food tablets that were their only nourishment, but he was different. He could remember how, when he was younger and more venturesome, he had gone about surreptitiously putting all sorts of things into his mouth, curiously exploring this queer property of materials to have varying tastes. Only once had he been able to lay his hands on one of the forbidden natural substances that must have served ancient man for food, but the memory of that experience would remain always with him. It was a small purple fruit and it had made his unaccustomed stomach dreadfully angry—but the taste! He closed his eyes blissfully at the thought. And imagine experiencing not merely one delicious flavor but hundreds, and not once in a lifetime but every day! 31K07 heaved a long regretful sigh.

HE should, of course, have been born twenty thousand years earlier. He would have felt thoroughly at home among the ancients. For despite their utter barbarism he wasn't sure that they hadn't had the right idea: a short life and a merry one. According to all the old accounts they must have had a pretty lively time. They never, at any rate, fretted themselves to death with the worry that they might die too soon—that they might disgrace themselves and their Kanbar by failing to reach the minimum legal age. Even their everlasting killing had had its compensations; for it was undoubtedly the un-

certainty of his existence that gave ancient man his fine careless indifference to the thousand dangers that constantly threatened his longevity. Why, he had even breathed unfiltered air, and not merely occasionally but all the time!

31K07 put up his hand and touched the filter that covered his nose and mouth. Unbending law required that it be worn at all times of possible exposure to unsterilized air, and with 31K07 that meant twenty-four hours a day. The device did not irk him physically; a long lifetime of wearing it had made the thing almost an integral part of his body. But he would have liked very much to get just one whiff of the morning air untainted by the odor of disinfectant. Often at night, when he knew he was well hidden, he had slipped the filter off for a moment and blissfully inhaled the air in all its freshness; but never in the daytime, and he wondered wistfully if with the sunlight shining through it the air smelled even sweeter than it did at night. He rather suspected that it did. But the delight of snuffing it was one that he must resolutely forego. The danger of being observed was too great. And now particularly, when he was already in marked disfavor over his stand on the question of moving the laboratories, to take so reckless a chance would be little less than suicidal. Regretfully, 31K07 put the thought away and walked to the railing.

Below, on either hand, was spread the city, the empty city. From it there rose an invisible something, a faint miasma of desolation and decay, that was saddening. Of the numberless huge square buildings, each with its shining silver tower, not one in a hundred, now, but was given over to the bat and the owl. A mere hand-

ful were still in use. The observatories, the solar-energy factories, the tidal generator buildings—these alone, together with the Bio-Genetic laboratories, still echoed to human voice and footsteps. In them a few thousand men and women briefly performed their appointed tasks, and then thankfully returned to the warrens below. 31K07 was probably, he suspected, the only soul in the entire community who lived above the surface from choice. Presently, even this rear guard would have gone. Even now remote controls were being fitted to the observatories. The day was coming, it was not far distant, when it would be no longer necessary for any man to venture above ground; and the Old Town would be left to crumble into dust without a human eye to see. 31K07 hoped that he might not live to see that day.

The Old Town! What a weight of years it had endured!—From the dawn of history, twenty millenniums in the past, and far back beyond that dawn, this spot had been the home of men. And what stirring times it had seen down the long march of centuries! Even as recently as fifteen hundred years ago the days of progress, of energy, of ambition, had not wholly come to an end, as the ill-fated attempt to colonize Venus proved. But that had been the last flicker. The spark was dead. And now men lived,—and that was all; lived dully, incurious, their only goal in living to retain life as long as possible, and to the attainment of that goal sacrificing all the pleasures, the stimulations, the excitements, that might make life worth living.

Looking at the Old Town thus, 31K07 liked to imagine how it must have appeared in the olden time, when man was just struggling up

from utter barbarism and life moved with a dash and a scurry. He could see it clearly in his mind's eye: the primitive buildings grouped in rectangular blocks with open streets between. The throngs of people, dressed in their queer tubular garments, engaged in the endless, incomprehensible bartering, which together with group murder, called war, was their favorite occupation. The bay would be covered with ships, for in those days there were many communities, and much trading of goods went on between them. Everywhere was the bustle of life and yet, queerly enough, in the midst of that pulsing life the most conspicuous thing was the indifference to death. Fires broke out, spreading sometimes to holocausts that destroyed hundreds; but the buildings would be rebuilt with inflammable materials. No one cared. Men fought in the streets with lethal weapons, sometimes singly, sometimes in groups. No one cared. Crude automobile machines dashed through the thoroughfares, knocking pedestrians down, right and left. The people merely got out of the way as best they could. No one cared about that, either.

EVEN so, 31K07 sighed. To have lived in those days, merely to have lived, would have been an adventure. Things happened, something new and startling occurred every moment. Now nothing happened. Nothing could happen. He had lived his three hundred and sixteen years in the dull routine prescribed by the Law, and he would end his days a few years hence, still treading the same monotonous treadmill, as his father had done before him, and his father's father.

He turned and went indoors. His bedroom was a small square apart-

ment walled and floored with shining aluminum plates. It contained little furniture: a bed, an easy chair, a book case and a desk. His tastes were simple. The large communication screen in front of which the desk stood was duplicated on the opposite wall by another. The first was part of a private system for the laboratories. The second was connected with the central station underground. At the moment both were blank. 31K07 produced from a closet a green robe indicative of his rank, and put it on. He rummaged in a drawer of the desk and brought forth a food wafer and inserted it into his toothless mouth. As he closed his jaws on it his gums gave a twinge of pain, and he scowled in puzzlement and rubbed them tenderly through his cheek. A worried look crossed his face. Could he have contracted some disease. He prodded the gums some more, holding the filter away from his mouth and being careful not to draw breath. Then he took from the drawer a hypodermic needle and, after cautiously retiring to the closet where he was out of range of both communication screens, he injected antiseptic into the arteries supplying the face and jaw. There were, he reflected, certain advantages in having a job that was semi-medical. If it was an infection that had attacked him he could doubtless clear it up with no one the wiser. Happening to some one less lucky the same thing might well result in a stiff fine and a year in quarantine. The law prohibiting disease was strictly enforced. He put the needle away, finished his brief toilet and then stepped into the lift.

It shot him down past thirty stories of tenantless apartments whose occupants had long since moved underground. At the base of

the tower he got out on the top floor of the laboratories. These occupied all of the building proper, which was ten stories high and roughly a quarter mile on a side, but only a small fraction of the available space was in actual use. The extensive, and now superfluous, facilities had been created nearly two thousand years ago for the purpose of supplying colonists to be transported to Venus. In those days the building had hummed with activity, producing ectogenic infants by the million. Then, after five hundred years of vain struggle, the attempt to colonize the inner planet had been abandoned. Now only a few thousand births a year were required to maintain the community's population of half a million, and the natural increase supplied those. The only vital function of the laboratories these days was the running of the tests that determined the membership of the small, selected group which, alone out of the whole population, was permitted to produce offspring. A few specialized types of medicines were manufactured, and during 31K07's regime research had been begun again in a small way after a lapse of more than a thousand years. These minimized activities made moderate demands in the way of equipment, and consequently only the tenth floor was occupied, and but a portion of that.

The room into which 31K07 stepped from the elevator extended along one whole side of the building, but only the near end of it was in use. The remainder, dimly lighted, ran off into the distance like a great, gloomy cavern. Along the wall a dozen white-robed technicians were perched on high metal stools, peering into their microscopes. All of them wore filters, although the air here came from the

central plant underground. This, obviously, was in anticipation of any whim of the Director, and 31K07's lips twisted in an ironical smile. The men, at his entrance, all greeted him respectfully, but an undercurrent of hostility was clearly apparent. Since their complaint had gone to the Council matters were becoming more strained every day.

AS he crossed the room a man stepped up and said, "The Twelfth Assistant Director has just been trying to get you, sir. Shall I connect him?" He started to lead the way to the communication screen, but 31K07 said, "Never mind. I'm going right in."

As he turned the corner he almost ran into the floor sweeper, an old man in a black robe, apparently almost senile. Actually, this man was only that day celebrating his two hundred and fiftieth birthday, the age before which it was illegal to die. Remembering it, 31K07 stopped, shook hands and congratulated him. The fellow's response was ill-natured. He kept his eyes on the floor, and when the Director turned away muttered something that sounded suspiciously like, "No thanks to you."

As he went out the door there was a line between 31K07's eyes. Things were more serious than he had supposed. The next thing, the men would be refusing to work. He wondered if there were any possibility that the Council would override his decision and move the laboratories. Well, he would know in a few hours. And the chances were, he knew, that the decision would be against him. Last time, when the question came up three months ago, the favorable majority had been only two.

Anger flared up in him at the

thought of closing his long career on this note of defeat. But in a moment a gentler mood replaced it. After all, from their point of view, the men were entirely justified in wanting to work underground. And what right did he have to oppose them, simply because such things, as the sun and the wind and the rain, were dear to him? He was simply being a stubborn, selfish old curmudgeon. The decent thing to do would be to accede to their request, accede graciously. He should have done it long ago. Feeling, perhaps, just a trifle ashamed of himself, 31K07 pushed open the door and entered the next room.

The assistant looked up as his chief came in.

"You wanted to see me?" 31K07 asked.

"Yes, the last batch of steneel has gone completely bad. We're running the tests on it now, but I'd like to have you look at it."

The Twelfth Assistant Director was a much younger man than 31K07, younger by more than two hundred and fifty years. He was, in fact, hardly more than a boy, yet the only marked difference in their appearance was that the younger man's skin was clear and firm. Both were hairless and toothless. Both were slender to the point of emaciation, and both had the same mature, intelligent, kindly facial expression. It was apparent from their manner that the relation between them was one of sincere affection and esteem.

When they returned to the assistant's office an hour later both sat down companionably, and after a moment the younger asked, "Well, did you get tossed out of bed last night?"

"Did I what?" 31K07 asked.

"Do you mean to say that you didn't wake up?"

"No, what happened?"

"Do you mean to say," the young man asked incredulously, "that you slept straight through the earthquake?"

"Earthquake?"

"Nothing else." He stepped across the room, pulled a lever, and a section of the wall slid aside. "Look here."

Looking, 31K07 saw quickly enough. The towers on half a dozen buildings near the western edge of the city were distinctly out of plumb. Two of them were leaning at such precarious angles that it seemed incredible that they did not fall. His balcony faced the east, which was why he hadn't noticed them.

"There were three shocks," the assistant went on, "all of them severe. I can't understand how you failed to wake up. I was on the sixteenth level below, and they threw me clean off my feet. Here in the building we had enough glassware smashed to outfit another laboratory." He hesitated, and then added softly, "And I'm afraid, sir, that there's no doubt, now, about what the Council will do . . . And after all, you can't blame the men for feeling as they do. Suppose the tower on this building came down. We're all right here on the top floor, directly under it."

31K07 smiled. "I had already decided to give my permission that the laboratories be moved. This merely adds another reason. I suppose, though, that I ought to move to safer quarters at once." His eyes grew melancholy. "How, I shall hate to leave! Do you know, I've lived in that room for more than one hundred and fifty years—ever since I came into the laboratories." For a moment or two he sat in sombre revery. Then he

shrugged and stood up. "I'm going up above. If you need me I'll be in my chamber until the ninth hour, when I go before the Council. And about that stene!—the whole trouble is undoubtedly due to the shiftlessness of the technicians, and nothing else. It's perfectly apparent that the atomizers hadn't been inspected for a long time. I don't suppose it will do a bit of good, but you might tell them that if anything of the sort happens again I shall have them all reduced to a lower Kanbar."

FOUR hours later, as the ninth hour approached, 31K07 was in one of the great central lifts underground on his way to the Council. He was thinking of the brief but carefully planned address he was about to make on the subject of moving the laboratories, and he could imagine what a sensation his volte face would create in the Council. In regard to that subject he had bully-ragged that senile assemblage for so long—they would probably be utterly flabbergasted. The thought made him chuckle.

But his thoughts were rudely interrupted. For at the sixth level the huge cage came to a halt with such jarring suddenness that several of the passengers were nearly thrown from their feet. As the car was an eighth level express the unexpected stop was followed by an excited babble of comment which waxed rather than waned as the minutes slipped by. Finally the attention bell rang and an excited appearing figure jumped into view on the elevator's communication screen. "There has been an accident," it announced. "This car will run no farther." Half a dozen of the passengers shouted, "What's happened?" But the figure disappeared without an-

swering, and the passengers, grabbing excitedly, trooped out.

It was a moment before 31K07 realized that all lifts had stopped running. The eighty shafts that filled one side of the square were empty of movement. He would have to take a monorail or else descend on foot. Half way to the control box to call a machine he decided on the latter, having only two levels to go, and a moment later he was running down the little used stairs that connected adjacent levels.

And, coming out on the eighth level he found that which put all thought of the Council out of his head. Grouped about one of the elevator shafts was a wildly milling mob, and, drawing nearer, 31K07 suddenly recognized what had happened. One of the cars, of which several ran in the same shaft, had fallen, and at this level had crashed into the cage below it. From the smashed tangle of metal that had been the two cars came only a few feeble groans; apparently most of the passengers had been killed outright.

The thing was utterly unprecedented. Not in a thousand years had there been an accidental death in the entire community. And even as he broke into a run the thought came to 31K07 that this was another proof of the growing slackness of the technical services. That thought came home again when he saw that as yet neither physicians from the hospital nor mechanics from the central control station had arrived. In the suddenness of emergency the services were simply failing to function.

Before the grill of the locked gates, which separated them from the mangled victims of the disaster, the crowd of onlookers milled about in frantic impotence. Mostly, they wore

the black robes of the lowest Kanbar, composed of criminals, faithless public officials and, chiefly, persons whose kindred had brought the disgrace upon their relatives by dying before the minimum legal age of two hundred fifty years. Without leadership these menials were helpless, and when, after a moment of dazed horror, 31K07 grasped the situation, he went instantly into action.

Even as he leaped forward he felt a swaying shock that nearly threw him from his feet, but he allowed himself no pause on that account. There was no time to bother with a mere earthquake. He pushed savagely through the crowd, his voice strident, and as its members fell back from the authority of his green robe he cleared a little space in front of the gates and rapped out a series of brisk orders. Before any of the trained workers arrived on the scene he had the work of rescue well under way.

It was two hectic hours later that the last of the bodies was taken from the tangled wreckage and 31K07, wiping his moist face with a corner of his robe, had time to look about him. The huge square was packed with a seething mass of humanity which overflowed up the avenues leading into it. The crowd, he guessed, must number forty or fifty thousand—a tenth the population of the city. It was in a state of restless disorder, and the thunderous muttering that rose from it had an ominous, threatening tone like the rumbled growl of a wild beast. He had never seen such an assemblage before and he found it rather disquieting. He wanted, suddenly, to get away from the mob. And now that the tension of the past two hours was over, he was aware of his fatigue. He groaned when he remembered that he still had the council

meeting to attend; at the moment he would have given a good deal if he might have retired straight to the peace and quiet of his own balcony. But he wrapped his robe about him and started along the narrow lane, roped off to facilitate the removal of the victims, that led to the monorail station across the square.

AND now he was puzzled by the murmur that rose from the crowd as he passed through it, a murmur that swelled and grew as he proceeded. Dark looks were bent upon him from every side. And then, suddenly, the storm broke. A woman, her face distorted, strained against the ropes to shake her clenched fists in his face. "Murderer!" she shrieked at him. And as though her screech had been a signal a hundred throats took up the cry. In an instant utter bedlam reigned.

For a moment 31K07 was wholly dazed by the assault. What was happening seemed unreal, like the horrors of a nightmare. He could think of no explanation for the outburst except that the crowd believed him to be in some way responsible for the accident of the lifts, and yet that did not seem possible. He was an elder, one of the most prominent men in the city, and surely even the most ignorant knew his position, knew that he had nothing to do with any of the mechanical services. For a brief space of time 31K07 seriously questioned whether he was not, actually, dreaming.

Even in its frenzy the mob did not venture to lay hands on a wearer of the green robe, and when half a dozen blue robed guardians of public order ran to his assistance any danger of violence was over. They escorted him across the square and summoned

a monorail car. It was just as he was in the act of entering it that his eye fell upon one of the public broadcasting screens on the wall. The television was showing a view of the Old Town, and immediately in the foreground was a large building the tower of which had collapsed. The corner of the structure on which the tower had fallen was demolished to a depth of two stories, and busy figures were swarming over the wreckage. At first glimpse 31K07, remembering the damaged towers he had seen that morning, took it to be one of them. Then, in a flash, recognition dawned, and the blood drained from his face. The building was his own, the one that housed his laboratories! It had succumbed to the last earthquake shock, the one he himself had felt two hours before.

Mechanically, 31K07 pushed the control button and the car shot into motion. He did not feel it. The reason for the mob's display of hatred was now appallingly made plain. He knew what must have happened. The laboratories were on the tenth floor, the topmost one, and in that corner of the building on which the tower had crashed. There must have been scores of casualties, more in all probability, than an accident to the elevators.

31K07 could imagine the state of the popular mind. For fifteen hundred years his people had been slowly degenerating, slowly losing the initiative, the ambition of their ancestors. And as their fund of vital energy had ebbed the residue had been increasingly focused upon the effort merely to cling to life as long as possible. In time almost the sole aim of the individual had been to keep alive to the last possible moment, and all the forces of the state had been harnessed

to assist him in that aim. For many hundreds of years, now, law and custom had minutely regulated every factor which could affect the longevity of the people. Any act, whether voluntary or not, which in the slightest degree jeopardized life, whether of oneself or of others, was a crime. And the most serious crime of all was to die before reaching the minimum legal age of two hundred and fifty years, for in every such death was contained a threat to the longevity of the entire race. By dying at an early age a person gave proof positive that he bore in his germ-plasm biological qualities unfavorable to long life. These, of course, had been transmitted to his offspring, and would be transmitted by them to their offspring, and so on, for generation after generation, each of the descendants constituting a new focus of contamination. A thousand years ago the law had sought to dam such a stream of poison at its source, by decreeing that when an early death occurred all descendants of the deceased should be forbidden to mate and produce offspring. In time, the distrust and fear of the populace had added further penalties, until today they were automatically reduced to the lowest Kanbar, the black, whose members performed the most menial tasks and had no political rights whatsoever. Furthermore, since it was always likely that the dead man's collateral relatives were infected with his biological weakness, the same harsh disabilities were visited upon all his blood relations, however remote. Thus the death of a person before the minimum age meant disgrace for hundreds, sometimes thousands, of hapless souls who were unfortunate enough to be related to him. And the law made no exception in cases of accidental death, since for

half a score of centuries such deaths had been wholly unknown.

TODAY, early deaths were very rare, but the fear of them hung over the people like a cloud. And now, suddenly, in the space of an hour, two tragedies had wiped out scores of lives. It was no wonder that the populace was aroused. And for the second of the tragedies, 31K07 knew, he alone would be held responsible. But for him the bio-genetic laboratories would have been moved underground fifty years ago. And in recent years the question had become acute. The laboratory workers had agitated unceasingly; public opinion had been aroused; and almost unanimously sentiment had favored moving them. Only his great influence, his stubborn opposition, had held them all at bay.

And now, this had happened. It meant, for him, utter, absolute ruin. Even if the Council were minded to save him they would never dare oppose the revengeful clamor of the mob. He was doomed. The very least that he could expect would be reduction to the black Kanbar. He, 31K07, an elder, Master Biologist, wearer of the green, would end his long career in a black robe; he would drag out his remaining years a felon and a slave.

His mind was numb with the shock of it all when, moments later, he stumbled out of the monorail car and shuffled away. He had descended to the twenty-first level, his only thought, like that of a wounded animal, to get away, to find a spot where he would be alone. And here, in the lowest level of the city proper, three thousand feet below the surface he was alone; when the car whisked back up the ramp it left him isolated. The huge corridors that radiated out from the monorail

station were deserted. There were no residences in the lower levels; mostly they consisted of storage chambers; and today the few men who worked here had evidently been lured away by the excitement. 31K07 began to walk blindly down one of the wide alleys, but he was very tired and after a little he sank down on the stone floor of a recessed doorway, pulled his robe about him and tried to think. But his mind, turning and twisting like a trapped animal, could discover no way out. There was none. For him, it was the end.

A long time passed. It was hours later that he was roused from his melancholy reverie by the irritating ache in his gums. It was worse than ever. The infection, whatever it was, had not been arrested by the treatment. He wondered if it were dangerous, and the thought came to him that, perhaps, the fate that had sent the disease was a kindly one. Death would be a thousand times preferable to the thing that he faced, Suicide—

But at that moment his thoughts were jerked from their introspective groove by the sudden awareness that there was water on the floor. It was wetting him as he sat there. He scrambled to his feet and out into the corridor, and found it filled. The water, about an inch deep, was flowing from the east, gurgling and lapping as it came. The depth was increasing rapidly.

He was puzzled for only an instant before the explanation leaped to his mind. From this level ran the tunnel that communicated with the quartz mines, six miles out under the sea. The quake had evidently opened a seam and the water, under a pressure of more than half a ton to the inch at this depth, was seeping into the tun-

nel. There were, he knew, automatic alarms, but they might have been put out of commission by the quake. At any rate, it was evident that the gates which guarded the city against leakage into the tunnel had not been closed. The presence of the water at this point proved that.

His own troubles forgotten in the face of this danger that threatened the entire city, 31K07 ran to the nearest communication screen. To his dismay, it was dead. With the water already halfway to his knees he turned and splashed back toward the monorail station. Then he remembered something and darted into a side corridor, a short cul-de-sac, on which opened the shaft of a freight elevator. It ran straight up to the central control station. A moment later he was shooting upward, and the television screen carried his terse warning to the broadcasting headquarters while he was still *en route*.

When he reached the top he found a dozen men, dressed in airtight underwater suits, impatiently awaiting his arrival, and when he emerged they flung themselves into the cage and hurriedly descended. More men came running up, fastening their underwater garments as they ran, and in the space of a few moments more than a hundred had been dispatched below. One who remained touched 31K07 on the arm. "Thank you for the warning. We got the alarm a few minutes before you called, but all the screens on level twenty-one are dead—the quake must have shorted the trunk cables—and we had no idea the situation was serious. There's something wrong with the gates, evidently; they're all closed, but they aren't holding the water. Will you step this way, please; the Director would like to see you."

A MOMENT later 31K07 was ushered into the Director's office and that one, an old man in a green robe got up from his desk and embraced him formally. "My dear friend," he said warmly, "we cannot thank you sufficiently. You have saved the city from serious damage. We closed the flood gates after receiving the alarm, and with the television screens out of commission had no idea that they were not functioning properly. But for you we should not have known of the danger for some time. You may be sure the Council will hear of what you have done."

A faint flicker of hope leaped up in 31K07's bosom at these words. Perhaps this might serve to partially balance his account before the Council. But the emergency left little room for thought of his personal affairs. "Are you sure you can stop the water?" he asked anxiously. "It's rising very rapidly."

The other shrugged and smiled. "I think so. The gates were tested only last week and they were in perfect working order at that time. In all probability the earthquake has damaged the electrical connections with the control station here; and if that is the difficulty it will be quickly found and repaired. There has been a good deal of such trouble, incidentally, since the last shock. Television screens are dead on three levels, and part of the ninth level was without lights for some time. And now, if you will excuse me, I should be at my desk. If you care to remain here, you're very welcome."

31K07 did care to remain. He stayed for a tense half hour, at the end of which the control station Director pushed back his chair and said, "There we are. My diagnosis was correct. They've found a broken cable.

We'll have the gates closed in five minutes."

31K07 breathed a sigh of relief and stood up. It had occurred to him that he should, long before, have reported back to the laboratories, his post of duty. The thought had simply not entered his mind before, and he chided himself. "I'm getting old and senile," he thought. He waited a moment longer to receive assurance that the gates had actually been closed, the inrush of water stopped, and then left.

He crossed the great vaulted chamber of the control station with its kaleidoscope of winking lights on the huge control panels that governed the city's light, heat, power, air and humidity, and entered the street beyond with some trepidation. He might have requested a guard, but his pride forbade. Once outside, to his surprise he found that the public televisions were already broadcasting an account of the danger the city had just escaped, an account in which his name figured prominently. It was evident that in making his report the director of the control station had spread it on thick. 31K07 smiled sheepishly, but it made him feel better. And though he was often recognized in the crowded street, there was no sign of any such hostility as had greeted him before. The throngs that surged through the public places were of a restless temper, but the hectic, threatening atmosphere that he had noted before had melted away under the ceaseless flow of propaganda from the central broadcasting station. Also, as he shortly learned, the Council, meeting in extraordinary session an hour before, had granted a general amnesty to all relatives of the victims of the morning's tragedies. Things were getting back to normal.

And now, with the shock of the day's events worn off, his mind functioning as it habitually did, 31K07 hastened his steps. He had been gone from the laboratories more than six hours, during the time when of all times he should have been there, and he felt like a guilty schoolboy. He had let his personal distress make him forget his duty. He should have returned immediately upon learning that the accident had happened. It was true that, if he had done so, the lower levels of the city might now be flooded, but while this thought softened his self reproaches it did not wholly allay them. He fretted at the slowness of the monorail car as it flitted noiselessly up the ramps from one level to the next.

In the basement of the laboratory building he learned that the lifts were not running, the fall of the tower having destroyed the hoisting machinery. He had to climb the ten flights of stairs, stopping frequently to rest. But when he had panted up the last of them he found that there was little to be done. The place was deserted except for the Twelfth Assistant Director, 2MM164 who, after the dead and injured were removed, had suspended all operations and dismissed the technicians in order to forestall any further loss of life in the event of another earthquake shock. The other eleven assistants, each of whom had active charge of the laboratory during one of the two hour shifts, had reported for duty during the emergency, but had left afterward when 2MM164 volunteered to remain. He was badly disheveled and carried his arm in a sling, but he greeted his chief as though nothing at all had happened. Together they made a tour of inspection. At one point, where the upper portions of

the tower had fallen with great force, the demolition was complete; but elsewhere, although the roof had sagged under the rain of debris, and even broken in places, the damage was much less extensive. And 31K07 was overjoyed to learn that although many had been injured only three men had been killed outright. His position, now, seemed by no means hopeless. If the rancor of the populace against him had been appeased by his warning of the flood, he was sure that his influence in the Council would prevent any severe punishment.

THEY returned to one of the offices that remained undamaged. 31K07 tried to persuade the assistant to leave, but the younger man insisted on remaining. Together, they set about preparing a report. If, on the morrow, 31K07 were removed from his office, he intended to leave for his successor the formal report that custom required. Despite his overwhelming fatigue he sat for a long time dictating into a recording machine.

And it was just as he finished that the thing he had been waiting, dreading, came. The attention bell rang, and on the communication screen appeared a figure in the uniform of a herald of the Council. He unrolled a scroll and began to read in a singsong voice the stilted command that ended; "Is hereby ordered to present his person before the Council of Venerables on the Eighth Hour of the Sixth Day of the Seventh Lunar Cycle." He paused, and 31K07 held his breath. Then the herald went on: "to receive suitable reward for the signal service to the State, and the citizens thereof."

2MM164 hardly waited for the herald to disappear. He threw himself across the desk and grasped the old

man's hands in a gesture that said more than words. And 31K07, gripping those friendly fingers tight while he blinked back tears of relief and happiness, could only move his lips wordlessly. Everything was going to be all right, after all!

A moment later they dragged a pair of couches into the office and retired. In spite of the weariness that pervaded every fibre of his being 31K07 lay awake for a time, re-living the events of the day. It seemed that ages had passed since the morning. And was it only that morning that he had said that nothing happened, that nothing could happen? He laughed to himself. He was cured.

Still smiling, he fell asleep.

He was awakened by a feeling of movement, and as he sat up in bed he felt it again. There *was* movement. The building was swaying, back and forth like a pendulum, and though the movement was not violent it was somehow sickening. 31K07 dropped his feet to the floor. As he did so he became aware for the first time that the air was filled with sound. Outside the wind was blowing a gale, and rain drummed against the wall. And over and above the sounds of wind and rain was another, a low, thunderous roar that was like no sound he had ever heard before. He called to 2MM164 and could hardly hear his own voice. Then he felt hands groping for him in the darkness, and a voice shouted in his ear, "We'd best get out of this, sir. The whole building may collapse."

The lights were dead. They groped through darkness to the stair well and began to descend. They stopped once for a moment and held their breaths when the structure shook savagely. Then they went on. But a minute later as they approached the second

floor 31K07 heard a cry from the other, who was feeling his way down a few feet in advance. The next instant he was knocked from his feet by the impact of 2MM164's body as he whirled about. "Water!" he shrieked.

He dragged the old man to his feet, and together they fled for their lives. They halted only once, gasping, three flights above, and when the water swirled after them, lapping hungrily at their ankles, they hastened on. When they reached the top floor and, perforce, again stopped, their hearts were in their mouths for a moment, until they realized that the flood was not ascending this far. 2MM164 led the way to the office. He threw open a panel in the outer wall. Side by side, unmindful of the wind and rain, they stood in the opening, staring out into the blackness that howled before them. Then came a flash of lightning, and in the brief instant of illumination the scene stood out in hideous clarity. Only fifty feet below them, at about the level of the seventh story, was the surface of a raging, boiling flood. The Old Town was inundated to a depth of more than a hundred feet. And the Buried City—

Both knew at once what had happened. The earthquakes of the past twenty-four hours had been merely the overture to a grander cataclysm. The entire coast had subsided. That which had been dry land was now become the floor of the sea. And the city below, with its teeming thousands, had been blotted from existence as thoroughly as though it had never existed. Not a soul in it could have escaped.

They sat together quietly through the long hours of darkness, waiting without hope for the dawn that neither expected to see. But though

the building creaked and sagged and trembled it held together, and shortly before morning the violence of the storm abated. Then came the sun.

THE city was vanished. A few scattered structures still stood, their upper stories alone thrusting above the surface, but the vast majority had crumbled and disappeared. To the east, where the landlocked harbor had been, nothing was to be seen but the grey plain of the sea. The new shore line was more than a mile to the west. Below them a long swell was rising and falling, and at each passing wave the building shuddered delicately. It was clear that it would not stand much longer.

Neither of them could swim. They searched the unflooded portions of the structure for materials with which to make a raft, but they could not find a scrap of any substance that would float. Driftwood and floating debris could be seen on every side, but the current seemed to carry the flotsam away from the building and hours passed before any came near enough to be captured. It was past noon when at last a small log drifted in against the wall. It was not large enough to support them both, and they disputed briefly over who should go. 31K07 ended the argument by saying, "My boy, this is a case of the survival of the fittest. I am an old man and feeble; I doubt that I could cling to the log long enough to reach shore. You are young and strong. There is no question but that you can succeed. You must go. I order you to."

2MM164 obeyed. There were tears in his eyes; but he scrambled down the face of the wall and pushed off. He did not look back.

For an hour 31K07 sat in the embrasure and watched the bobbing

head slowly recede. The sun came out from behind the clouds and warmed him; and he was not uncomfortable. His mind was at rest; he was not afraid to die. He even dozed a little.

It was some time later that he suddenly scrambled to his feet. "You old fool!" he exclaimed. He walked rapidly into the interior of the building until he came to a huge chamber down which there was row after row of the incubators in which, years before, ectogenic embryos had been developed. They were made of fused quartz in the shape of a box three feet long, two wide and two deep. The covers were air tight, and the metal frames that held the quartz boxes were detachable and interlocking. He dragged half a dozen of them to the outer wall, locked the frames together and had a perfectly seaworthy raft, six feet by eight. He launched his craft without great difficulty, tied himself securely to it with strips cut from his robe and armed with a strip of metal for a paddle, set out.

He drifted slowly in, assisting his progress with the paddle when he could. He was a long time on the way, the shore approached with maddening slowness, but the trip was uneventful except that during the latter portion of it he suffered from sea sickness. About sunset he waded through the shallows and dropped, exhausted, on the grassy hillside. Presently he slept.

It was night when he awoke. The stars were out, and in the east the moon was rising. He lay quietly for a little, listening curiously to the unfamiliar chugging of frogs in a swamp behind the hill, before he realized that the yellow glow on the horizon was no moon but a fire. When he moved aside a little he could see

it clearly, and the tiny figures of men moving about the circle of light that it cast. It was only half a mile away, under the walls of the old interplanetary beacon station.

There had been other survivors! And, now, he could see how there might well have been. The observatories and the generator stations had been above the surface, and some of the workers there had succeeded in reaching the shore. And the interplanetary beacon was the logical place to gather, since it offered the only available shelter. 31K07 stretched his stiffened limbs and began to walk toward the fire.

THE feel of the soft ground under his feet, so long accustomed to hard floors, was good, and a cool little wind blew against his face. He jerked the filter from his face and tossed it aside, and found the gesture somehow symbolic. Gone forever was the artificial existence that he had always known. Henceforth from tonight he and those who waited beside the fire stood face to face with Nature, armed with no weapons but their hands and their wits. They were about to begin once more the bitter struggle that ancient men had known, merely to cling to life. And they faced that struggle with but the poorest of equipment. It was not only that the collected knowledge of his race was entombed forever in those buried libraries above which the sea now rolled. Controlled evolution had robbed him and his fellows of the physical characteristics that primitive men had found most useful. Their muscles were weak. Their senses were blunted. They had not even teeth to chew the rough food that henceforth must be their fare.

Nevertheless, 31K07 was aware of

no feeling of apprehension. Contrarily, an odd excitement filled him, and, tired and hungry though he was, he felt somehow *alive* in a sense that he had never before known. He looked forward eagerly to what the coming days would bring, and he wished with a sudden wistfulness that he were young again, that his portion of those future days was not so pitifully small.

When he arrived at the fire, gleaming fitfully against the towering white walls of the beacon station, he found a group of sixty, including a dozen women. Dazed by the appalling finality of the disaster that had befallen them, most of them sat staring into the fire in a lethargic stupor that not even the unexpectedness of his arrival could shake. They merely stared at him dully, incuriously; 2MM164 alone rushed forward to greet him. 31K07 eyed their apathy with disgust. Had they no imagination? Were they unable to realize that they stood on the threshold of adventure such as no man had known for thousands of years? Bah! Tomorrow, he promised himself, he would kick some life into them if they didn't wake up of their own accord. There were a million things to be done.

He sniffed. An odor filled his nostrils, a most agreeable odor, but wholly unfamiliar. Then the explanation leaped to his mind. Food!

The first arrivals had found a deer wandering through the deserted chambers of the beacon station. They had trapped it there and killed it with clubs. The metal cap from one of the telescopes had been pressed into service as a kettle. Half full of meat it stood beside the fire.

As he strode toward it memory suddenly smote him. He had forgotten all about his diseased mouth. He snapped his jaws experimentally. His gums were still sore, they hurt when he champed them together. Yet the sensation was hardly that of pain either. He champed them again and a little line came between his eyes. Then he put his hand to his mouth, and the exploring finger as it ran along the lower jaw encountered a hard little bump, and another, and another. A look of incredulous astonishment spread over his features. Then he began to grin.

2MM164 stepped forward solicitously. "I'm awfully sorry, sir," he said, but the broth is all gone. We didn't have enough as it was. And the flesh, of course, is inedible."

31K07 calmly selected a morsel and popped it into his mouth while the other eyed him with surprise. "My boy," he said, smiling through his mouthful, "as I told you before this is a case of the survival of the fittest. I'm growing a new set of teeth!"

THE END



DISCUSSIONS

In this department we shall discuss every month topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

A New Zealand Writer Gives a Detailed View of AMAZING STORIES

Editor, AMAZING STORIES:

I shall have to commence this letter in the conventional way by saying that AMAZING STORIES is the one and only science fiction magazine. Even here on the other side of the earth "our" magazine is known and lauded, and although we are about three months behind in receiving AMAZING STORIES, I am sure that no one looks forward with so much zeal to the next number as does yours truly out here in New Zealand.

I have just received the March number, and firstly, allow me to congratulate Morey on the splendid cover illustration. I cannot remember one that has been better, or at least, its equal. Next, I am pleased to see that you are giving us the "Professor Jameson" stories by Neil R. Jones. I have never enjoyed a series of stories so much as this one which tells us of the adventures of Jameson and the Zoromes. Give us many more of these stories please. Of all the short stories you have printed since I have been reading A. S. (since 1931) I have enjoyed none better than "Omega the Man." That was a wonderful yarn. While on the subject of "best" stories, I must say that the best "science fiction" story I have ever read was in one of your rival magazines. However, that does not deter me from saying that "our" magazine is the best of the lot.

You have in me one of the supporters of the smaller size. I think it is much more neat and convenient. But still, I don't mind about size, edges or print as long as you continue to give us the splendid stories which we enjoy reading now. While you continue to do so, you will have a lifelong admirer in

L. S.

Auckland, New Zealand.

(We have great hopes for the future of the "Jameson" stories. Neil R. Jones has hit the mark in them, and you will see more of them. "Omega the Man" has received praise and blame, the former prevailing. It impressed us as very appealing, even as a tragedy, and, as you put it, "a wonderful gem." The smaller size adds to the dignity of the magazine, a change which improves its general appearance. EDITOR.)

Obtaining AMAZING STORIES in England and the Price

Editor, AMAZING STORIES:

Yesterday I received the July issue of AMAZING STORIES, the price being 1/3d. I have mentioned the above because of the oft repeated complaints that appear in the Discussion Columns by English readers (a) That they cannot obtain A. S. regularly, (b) they have to search through second hand bookstalls for them, and then only able to get the April issue in June, etc., whereas an order placed with their news agent would get them the current number. Of course the price 1/3d may be the trouble, or they do not know that A. S. is obtainable over here. In my opinion buying old issues at 3d or 4d is not supporting the publishers, and they cannot claim to be true A. S. readers, in the sense that they do not help to keep the magazine going, as even if they introduce new readers they also will most likely buy their issues the same way, thus not increasing your sales.

Now a few words about the magazine itself. The covers and illustrations are A-1, and the stories are usually very good except for odd ones e.g., "Millions for Defence." How on earth did this get in?

Also I have a complaint to make about the printing of A. S. I keep getting issues with most of the pages blurred, as if they had been printed twice, this spoils the stories because of the difficulty experienced in reading same.

However, on the whole the magazine lives up to its name of being the "Aristocrat" of Science Fiction, and I wish it every success, and shall continue to give it my support.

S. A. ARVEY,

"Steep Way",

Gledhow Park Drive,

Chapelton,

Leeds, Yorks, England.

(You will find a great improvement in the make-up of AMAZING STORIES, as we have instituted an important change which shows its results in the October issue. AMAZING STORIES has often been called the "Aristocrat of Science Fiction." We hope to live up to that name. You will find the printing much clearer than formerly. EDITOR.)

A Change of Opinion Chronicled—But We Are Sorry You Had an Opinion to Change

Editor, AMAZING STORIES:

Through your courtesy in printing my letter in the May issue, I have disposed of the books I mentioned. You have my sincere gratitude for the service.

Now to get down to the more interesting subject—our magazine. You know that up until the beginning of 1935 I frankly believed that A. S. was the poorest magazine in its field, and purchased it only for the sake of collecting all forms of science-fiction? It's true, and I'll bet many other readers read it for the same reason. However, since January, 1935, the magazine has taken a wonderful turn for the better, and I can safely say that this month's issue is the best magazine in science-fiction. It seems as though the authors are now concentrating on A. S. as a market for their best stories. Why, even Morey seems to have taken my criticism to heart, for his inside illustrations are not so stilted. Rather, they seem more lifelike than ever before. His cover, as usual, is excellent. You understand that I do not criticise his covers; it is his "black-and-whites" that I find fault with.

However, now that I think of it, perhaps I did put it a little too strongly regarding my criticism of Morey's work. But, honestly, don't you think he can do better? Take, for instance, his illustrations for the old, large-size magazine. Aren't they much better? Perhaps it's just that his style is better suited for the large size.

Here's a point about my criticism of Morey's drawings: perhaps, as you have previously said in your comments on several letters, I, being one of the younger set of readers, (I am thirteen years old) have not yet developed enough "elasticity" in my criticisms, as would an older person, having better insight. (This sentence is somewhat disjointed, but I think you know what I mean.)

As to the stories themselves: without a doubt the first part of "Liners Of Time" was the best story in the issue, but it ended just when I began to enjoy it. In my humble opinion, Fearn is one of the three best of the comparatively new science-fiction authors, the other two being Jack Williamson and J. W. Campbell, Jr.

"The White City" was a typical Keller yarn, and well up to the good doctor's standard. "A Saga of Posi and Nega" was much better than the previous "An Epos of Posi and Nega." Mr. Skidmore displays great writing ability and an entrancing style. "Gipsies of Thoos" is another swell story. However, I did NOT like "Older Than Methuselah," by Coblentz. I don't know

why, but I found myself counting the number of pages to the story's end, and thinking of how much space was wasted, which might have been given to more of "Liners of Time," or some GOOD novelette. Perhaps it was because I read it immediately after "Liners of Time," which had such a strange atmosphere, and I felt "let down" in comparing it with Fearn's masterpiece of science-fiction. I think Coblentz had better stick to writing satirical novels.

By the way, what has happened to "The Emperor Of The Sahara," by Fletcher Pratt, "The Kingdom Of Thought," by L. A. Eschbach, and others announced in the December, 1934 issue.

Hoping you keep up the good work, and wishing you all the success in the world, I'll conclude with a request for correspondents, particularly those of my own age.

CORWIN STICKNEY, JR.,
28 Dawson Street,
Belleville, N. J.

(The stories you inquire about will appear when we are less crowded. You are an excellent critic, and evidently appreciate the peculiarities of the younger writers' expressions and views. As one grows older he becomes a little more lenient and "elastic", as you put it, in his views. We seldom have a letter from so young a reader. EDITOR.)

A Somewhat Severe Rejoinder from a Young Reader.

In discussions of December, 1935 there was printed a letter written by a very narrow-minded person, condemning extremely AMAZING STORIES and the type of story which is published in the magazine. Charles Pizzano, the crank, who has the idea that only he is right, wrote: "I want to see your comment on it (the letter) and also get the reactions of fellow readers." Here is my reaction as one fellow reader: "I am writing to give you some tips on improving the magazine.—" My dear Charles, if you aren't going to buy AMAZING STORIES, why write the editors concerning the magazine? Why do you care what happens to it?

"Stop publishing satirical stories." Many people enjoy satires, Charles, even if your mental capacity is so limited that you cannot enjoy them. In fact the tales of Washington Irving, considered the greatest satirist of all time, are regarded as among the best in classical fiction and non-fiction.

"Stop printing stories dealing with time travel. Time travel is nothing but a foolish, fanciful dream." (Your letter is beginning to look like a Stop-and-Go sign.) Time

travel may be a fanciful dream, but it certainly is not foolish. Is it foolish to try to please the large majority of readers who find such stories the most interesting of all? I, for one, am of that majority.

"Even your art work is of low quality. Your sole illustrator, Leo Morey, is not very good." Suppose you had been doing your best in a particular branch of work for your Company for a good many years. Would it make you feel very good to have someone say your work was of low quality, to have them imply that it was below standard? You compared Morey's work with that of—, with his mechanical-looking humans—, with his monotonous faces—, whose illustrations are so filled with circular machines that one can hardly distinguish one illustration from another.

"This letter—is written for your own good."

Well isn't that sweet of you?

"I have stopped buying AMAZING and I won't start again until it is greatly improved." How are you going to find whether or not it is improved unless you do buy it? Oh yes! You'll probably borrow it each month.

Perhaps, my dear Pizzano, I have likewise been sharp in my criticism of your missive (missile?). But you asked for it.

The new printing on the back of the magazine makes it look bigger. Is that the purpose for which it was intended? Morey's December cover, tho' simple, is very good.

In my opinion "Draughts of Immortality" was fairly good. It would have been very good; had it not been for the dream ending, which is out of date. The story, however, was quite a bit like H. Rider Haggard's "She."

H. Weissman of New York, congratulations on your intelligent letter. Roy Koski of California, you also deserve a good deal of credit for your most interesting numerical text.

As it appears to be the fashion to state age and grade, I am fourteen and am in the third year high. Would like to correspond with English speaking boys and girls aged fourteen to eighteen, any country on any subject. Good luck!

WILLIS CONOVER, JR.,
280 Shepard Avenue,
Kenmore, New York.

(This somewhat severe letter impresses us as extremely well written. Its critical tone is justified perhaps by the letter which it answers. It tells its own story so well that it leaves nothing for us to say. We shall hope to hear again from you soon.—EDITOR.)

Do Not Mind Hurting Our Feelings. We Are a Target for Such Letters as This One

Editor, AMAZING STORIES:

Don't get the idea that I'm a moronic crank. I'm not. However, I'm about to say some things that may hurt your feelings. My only desire is to help you.

Now, then. I believe that I am justified in saying that AMAZING STORIES is not as good as the other Stf. mags. Here's why. You are I think entirely too conservative. That is, you conserve in the wrong way, you are standardizing your stories too much, don't get the impression that I do not like interplanetary stories because I do like them best of all, but your stories are too much the same. Some of them were good but more were bad, although none have yet reached the height of punkness that some of the other types have. For instance, I do not see, and I don't think any one else does, how the proper nerves will connect with each other in the miraculous brain transferences told of in "RESTITUTION." Enough of this fault-finding.

Here's what to do about it. Widen your scope to the "different story;" pay no attention to those who screech "Impossible;" they cannot prove that anything is impossible any more than you can prove that it is. And I believe that enough readers have asked that you return to the large size to show that most of us want it. Who cares whether they can get the magazine into their pockets? They just tear it up getting it out again. Also, this shows that they are ashamed to show AMAZING in public. Besides the large cover permits a better cover-illustration and attracts the attention of people who disdain to touch a "Dime-novel" type mag. So let's have the large cover back.

Also, lately you have printed two issues in one which makes it look as if AMAZING STORIES were about to go bi-monthly.

ARTHUR R. MINK,
EMPEROR SFPS
1802 N. 8th St.,
Boise, Idaho.

(For the present AMAZING STORIES will be bi-monthly. Your third paragraph seems to operate to contradict your second one. Science fictional stories have to include impossibilities. We should esteem it an honor to receive a letter from an emperor even if his realm is not very clearly stated. For the present AMAZING STORIES will be issued as a bi-monthly. So many readers have expressed approval of the small format that we do not wish to change it.—EDITOR.)

AMAZING STORIES is Said to be Improving
Editor, AMAZING STORIES:

I believe I've said before that your magazine is improving. Well, I want to repeat, emphasize, and explain that statement.

First and foremost, like the sun in a brightening dawn, looms the good old, beautiful comet title which graces the cover of the July issue. Not even the little blue star on the peak of the foremost "A" is missing!

And just look at those authors who grace the Contents page; Fearn, Verrill, Jones, Miller, and Vincent. What a lineup! One newcomer, though. Arthur Cave. At least I can't remember reading any of his before. I haven't read his story yet, but I suppose it's O. K. I've almost ceased to expect anything else.

The best story in the issue, not counting either of the serials, is the Prof. Jameson story, of course. That series of stories is the most fertile source of excellent adventure-science that could be found. Ever since the first Prof. Jameson story in '31, I have read them first in whatever issue they appeared. I've never been disappointed.

Simply because I like to talk about anything I've especially well liked, I'm going to list the Professor Jameson stories in order of merit.

1. Into the Hydrosphere. The best of the best.
2. The Return of the Tripeds.
3. The Sunless World.
4. The Space War.
5. The Planet of the Double Sun.
6. The Jameson Satellite.
7. Time's Mausoleum.
8. Zora of the Zoromes.

The last on the list are by no means poor. Nor are they merely good. They're excellent, in the upper 10% of all the stories you've published. Let's have the list grow!

By the way, in the May issue of your magazine I explained why I thought that space wouldn't seem to be an absolute black when viewed from outside the atmosphere. You answered me by saying that the stars show no halo. I see that I did not explain my point quite clearly. What I meant was that in space every star could in some degree be seen directly. Each would have no perceptible diameter, and certainly no halo. But there are very very many stars in space. They would present the appearance of very fine dust.

No, no matter how fine, the dust particles show as a uniform mass—a cloud. The particles themselves would not be visible to the imperfect human eye as such.

What I mean is that in airless space, the whole sphere of vision would be a Milky way of untold trillions of stars.

Strangely enough, in the May issue of another magazine there appeared a story based on the same idea. I refer to "Set Your Course by the Stars" by Eando Binder.

OLIVER E. SAARI,
 1712 E. 24th St.,
 Minneapolis, Minn.

(Eando Binder is well known to our readers as an author of some excellent stories. Your idea about the stars, as they would appear in space, if there were no atmosphere to cloud the view, is interesting. It is a definite comfort to receive such a compliment as yours.—EDITOR.)

An Appreciation from South America. A Present Day Space Suit

Editor, AMAZING STORIES:

Congratulations for having back the good old "comet"—title, but—please—leave the "bugs" off the letters!

Sorry I mixed up Mr. Winter in a business with which he has nothing to do, of course I meant Mr. Morey in the second paragraph of my last letter.

With 26 elements in the alphabet there are 2600 combinations of 3 letters not repeating any letter in the same group. Now, why has Mr. Vincent chosen the combination Z O R as the name of the dying world of the Parasites? Why could he not take one of the remaining 2599???

Z O R is supposed to be the home-planet of the ZOROMES ever since "The Jameson Satellite" by Neil R. Jones appeared in AMAZING STORIES for July, 1931.

ZOROMES are not to be confounded with parasites!!!!!!—

By the way, *SPACE-Suits* are now available, a Spanish gentleman is going to wear one on a stratosphere-flight in the near future. (I saw the pilot with donned space-suit pictured in the newspapers recently.)

May the circulation of AMAZING increase with the square of time!

HANS J. LESSER,
 Rio Segundo F.C.C.A.,
 Argentine Republic.

(Perhaps some other triad from the alphabet would have been an improvement on Zor. Of course there are many combinations which could not have been used, as there must be a vowel in the supposed name. It is very pleasant to feel that a special name has gone into the records due to one of our stories. What you say about the Space Suit, is interesting. When man can go to an elevation of twelve or fifteen thousand feet it might be very useful. EDITOR.)

Back Numbers to Dispose Of

Editor, AMAZING STORIES:

I would appreciate very much if this letter is placed in your Discussions.

I have some ninety (90) issues of AMAZING STORIES for disposal. The earliest number is July, 1926, (Vol. 1, No. 4). The stories written by Dr. E. E. Smith, John W. Campbell, Jr. and Jack Williamson are included.

Having read nearly every story A.S. has published, I can say there is no other science-fiction magazine on a par with AMAZING STORIES.

ROBERT FULLER,
43 Hawthorne Street,
Brooklyn, N. Y.

(The two announcements following this may answer your question.—EDITOR.)

Back Number of A. S. Wanted

A correspondent wants to procure the October, 1928, issue of AMAZING STORIES. Anyone having such copy for sale, may address C. G. Remy, 25 West Broadway, New York.

An English Boy Tells His Preferences in Our Stories

Editor, AMAZING STORIES:

I have read the magazine AMAZING STORIES since 1932 and I intend to continue to do so. My age is 13½ so I cannot grasp the long scientific explanation to some of your stories. In England your magazine is rather hard to get regularly, and so often I miss parts of your serials.

I like the new size of A. S., it improves Morey's illustrations.

If by any chance this letter is printed, I should like to correspond with an American boy interested in stamps.

I should like to exchange any thirteen A. S. consecutive (before October, 1932) for A. S. from September 1934 to September, 1935.

NORMAN SUNDT,
Coniston,
Kiswick Road,
Putney, S.W. 15,
London, England.

(AMAZING STORIES is well treated by English and Colonial readers; it is our own people that scold us. We try to believe that we deserve the criticisms, but certainly letters like yours are far pleasanter than criticisms.—EDITOR.)

A Comparison of English and American Languages

Editor, AMAZING STORIES:

Congratulations! Another first rate issue of A.S. The October number was really magnificent, and is, apparently, improving

every month. There was, however just one thing that marred an otherwise perfect number—the letter from W. B. Hoskins, and in a minor way, that of C. Hamilton Bloomer, Jr. The former tells us that Americans are developing a language of their own. This is emphasized by Mr. Bloomer who writes: “. . . . We have our own language, American-English, a language superior to ordinary English. Any language without *slang* (the italics are mine) will eventually die out.” A sweeping statement, gentlemen. I have always been given to understand that there is no purer English in the world than that spoken in Boston and Washington, D. C. Therefore, I shall look forward with interest to the day when I am privileged to hear a blue-blooded pillar of Boston society refer to his feminine friends by such endearing terms as “skoits,” “frails,” and “dames.” Perhaps they will adopt the rest of the jargon which apparently illustrates the “new American language” as inflicted upon us by the sound films? I readily admit that there are many American colloquialisms as “Oh yeah!” and “Sez you!” which are more expressive of their very curtness than any longwinded English equivalent. But is Mr. Hoskins’ intellect such that he would have us believe that he prefers “Aw! Why don’ youse guys quit bellyacking”? than the more lucid but no less emphatic “Stop grumbling”? I have not the slightest hesitation in saying that Mr. Hoskins will find himself in the minority even in America, if this is the case. He lays down the law in no uncertain terms upon the English language, but includes such expressions as “deserves the razzberry,” “nuts to you,” and “Brick-batty Aussie!” He tells us that the “English *don’t* own the English language.” Perhaps not, we only invented it. But perhaps Mr. Hoskins converses with his friends in Sioux or Pawnee? Shakespearean English, anyhow, is not appreciably different from that spoken in this era.

However, I will take your advice, Mr. Hoskins, and borrow from Shakespeare’s “Macbeth” in closing this letter. To you, Mr. Hoskins, I dedicate the quotation: “Out, damned spot.”

Sorry, Mr. Editor, but I am feeling peeved.

GEOFFREY WELKS,
3 Inglewood Mansions,
West End Lane,
Hampstead, London,
England.

(We are definitely on your side in the discussion about English and American language. It is fair to say that the difference between them as used by cultivated

people is infinitesimal. There is a difference in pronunciation, and must be, because there are virtually real dialects in England, while in the United States we have not progressed beyond slight differences of pronunciation. This remark leaves out "Pennsylvania Dutch" as it is generally called. It is based on the German Palatine dialect, the people being driven out by Louis XIV and absorbing some of the Hessians sent to fight the Continentals under the auspices of George III. Shakespear's English is superb—he uses nominative cases sometimes where we use objectives. But it may be doubted that these are errors.—EDITOR.)

A Very Severe Criticism of Amazing Stories

Editor, AMAZING STORIES:

Every now and then, for no reason at all, evidently, you publish a readable story, a good serial, have decent illustrations, and so forth. And conversely, ever and anon, you have a bad cover, which is a suprising event with AMAZING STORIES. To me, though, the most amazing thing about your magazine is that I continue to buy it, month after month, even while I know it to be the worst stf. publication on the stands, and the most expensive at that.

I have long since despaired of writing to you for the purpose of showing you the error of your ways, or to plead for a bit of improvement. That, I know now, is worse than hopeless. Adverse criticism merely rolls off your philosophical shoulders like water from a duck's back, and you blithely quote ancient axioms about not being able to please EVERYONE, or the proved law of youth's critical and bombastic nature, or again your rising circulation figures, and the tirade is relegated into the limbo of forgotten things. From your angle, the position you take is ideal, but from the poor hopeful readers who remember what a wonderful magazine AMAZING STORIES was during its first years, and how lamentably it lags behind the race today, the situation is well nigh desperate. Whoever dubbed you "Aristocrat of Science-Fiction" smote the nail a resounding blow on the head. That is at once the highest praise and the most scathing calumny which can be bestowed upon you. For the true aristocrat is what he is by divine grace, and is as unchangeable as the rock of Gibraltar either for better or for worse. So are you: AMAZING STORIES is just as good now as it was five years ago, but in no respects better. I am referring to your contents, not your appearance. As to the rest, you can reëcho Popeye the Sailor man and say "I yam what I yam

and that's all I yam." Alas, 'tis the bitter truth.

Why am I taking the trouble to write at all? Your July cover has given me the impetus. That cover with the joysome return of the comet head title is the grandest thing I've seen in years. I wanted to stand right up and cheer for you, and pledge again undying devotion to you, in spite of all the things I mentally curse you for. When I read the July issue, I'll probably be as bitterly disappointed as I was when I finished the May and June issues. They both LOOKED so good. In your favor, I will say that your two serials "Liners of Time" and "The Inner World" are splendid, and that the "White City" and "Gypsies of Thos" were likewise excellent. The rest were down to your usual standard of unreadability and hackwriting.

It seems to be the custom for carping critics, like myself, to commend your editorials, and far be it from me to slight them. At least you make no pretence: you have never said (or implied) to the readers that this was their magazine. Every issue you've printed has reëchoed the statement "This is our magazine and we are running it to suit ourselves. If you, the readers, do not like it, we are sorry." Perhaps you can continue indefinitely on the strength of your editorials, and the bits of knowledge contained in your so-called stories. It is quite evident that some people are satisfied with them.

But I do wish that there were some law against calling your magazine science-fiction when less than one-third of your contents can be honestly called that. And I also wish that there were a law against stf magazines, which should be at the vanguard of magazine literature, making themselves reactionary and the quintessence of stale conservatism.

This, by the way, was not written merely to see my name in print, although that is the most I can hope for in regard to it. I suppose one could dare you to print it, but that, too, would be useless—I can repeat just what your comments would be, you don't have to make them.

And in conclusion, if you have been wondering, I do not know how to run a magazine—I've had experience.

ROBERT W. LOWNDES,
Darlen, Conn.

(This letter speaks for itself. We have only two observations to make. Other readers have taken views diametrically opposite to those you express. The second observation is a question. Was the magazine you edited a success?—EDITOR.)

Commendation Needed in View of Some Criticisms Which Have Been Lavished On Us

Editor, AMAZING STORIES:

Writing this letter to let you know that I enjoy the A. S. better than any other science-fiction magazine on the market.

About the stories I have not much to say except that "Liners of Time" was the most refreshing, thought-stimulating, delightful science-fiction story that I have ever read and that is lots for I have read many even if I am fourteen years of age and that but recently.

Now to get to the other stories. "World Aflame" was excellent. "Earth Rehabilitators, Consolidated" was more so. David H. Keller's "White City" is, as usual, good. Joseph Wm. Skidmore and his Posi and Nega stories are fast becoming popular with me.

One thing that I would like to know is why you missed the September issue of AMAZING STORIES.

Morey and his pictures are getting better and better. Keep him.

It is rumored that AMAZING STORIES is on the decline, but don't let that scare you. You are still good. So here's hoping for bigger and better stories, a long life and hoping that this letter gets into the Discussions (Amen).

ALGIRD POCRISS,
725 W. 120th St.,
Chicago, Ill.

(All we can say in response to this letter is that it is refreshing to get a commendation like yours. We hope we deserve it.—EDITOR.)

Another Reader Wishing to Dispose of Back Numbers

Editor, AMAZING STORIES:

In 1930 I read with great delight, the story "Skylark of Space" by Dr. Edward E. Smith, Ph.D., and its sequel in the August, September and October issues of the same year. I would like very much to obtain the complete text of these stories, and I would like to know if you can furnish copies of the issues involved, reprints, or whether Dr. Smith has published these stories in book form and if so, where they can be obtained.

O. HUGO SCHUCK,
1816 N. 17th Street,
Philadelphia, Pa.

(You may hear from some of our readers who can supply the back numbers you desire.

If you will look through the last few issues of AMAZING STORIES you will find several statements in the Discussions from readers who have copies to dispose of. The story has not yet appeared in book form.—EDITOR.)

A New Zealand Correspondent Writes a Very Encouraging Letter

Editor, AMAZING STORIES:

Although I have been reading your magazine for a considerable period, this is my first letter to you. Firstly, I must congratulate you on your excellent publication which, apart from fictional character, contains scientific data that are very interesting and instructive to the most humble of visionary, and shall I say intellectually, endowed persons. Although the laws of science and matter are sometimes strained to their utmost, the average story is well worth reading. The recent discovery by Prof. Appleton, regarding the supposed existence of a "heat" layer of some 1000° C. above the "Appleten" layer, rather upsets the idea of interplanetary travel and at the same time opens up new possibilities on the existing theory of the "so-called" meteor. If, say, the tremendous heat generated by a body falling through space was discounted, would it not be probable that when it reached the "Heat" layer it would be set alight and consequently burn brightly until it reached the end of the layer, and then be extinguished while traveling on the remainder of its journey to finish on earth, or elsewhere, as an interesting relic of an unknown world? Mind you, don't take me seriously as this is only a theory. At any rate, I wish you and your staff the best of luck and urge you to maintain the excellent standard of uniformity in all your stories.

I would like to correspond with some of your readers in America. I am interested in aviation, all branches of engineering and promise to send illustrated literature and decent letters to all who reply.

ST. A. HOPKINS,
Ct. W. R. Campbell,
Matakana,
Rodney County,
N. Auckland, New Zealand.

(We always get agreeable letters of appreciation from readers on the "other side." The "heat layer" is best considered as theoretical and it is hard to see how its existence can be proved. It might help to account for the temperature of meteors. We often have letters in which the writer expresses his desire to have correspondents. Your letter should certainly bring results.—EDITOR.)

A Letter from the Lone Star State

Editor, AMAZING STORIES:

I won't say AMAZING is the best science-fiction magazine, but it's all right. I am glad to see that you do not take up a page or two each issue telling the readers how good you are and how bad the other magazines are, as one of your rivals has a habit of doing.

"Life Everlasting" is one of the best stories I have ever read, though I didn't like the ending. "Conquest of the Planets" was very good, and is the kind of story I like, and also for space stories, of which the Prof. Jameson stories are some of the best. I have very little kick against the rest of the stories, though there are a few I don't like.

Of late I have noticed several pleas for you to go semi-monthly. And also you told another reader you could not get all the authors he named into a monthly; so why not go semi-monthly? It would mean more money to you, and all science-fiction fans would surely continue to buy it. You know how they are.

I am in favor of reprints if they are good, and not Poe's and Verne's. I think there should be a final vote on this question, and also on what you would reprint.

Morey is as good an artist as Paul or any other in my estimation, but I don't care in the least about that, or about the rough edges. Everybody should know that money spent by you in trimming the edges could be spent much better in getting better stories.

For anybody interested, I have some old Argosies and Blue Books containing fantasies by Burroughs, Cummings, Merritt, Farley, Kline, Leinster, Victor Rosseau, and others that I would like to sell. Also I have some science-fiction magazines though they are not very old. Anybody that wants to buy them, write me.

JOHN BRADFORD,
2635 Hazel Street,
Beaumont, Texas.

(Your letter expresses very much of our opinion about artists and authors. The ending of "Life Everlasting" was quite artistic, bringing out an example of the sad ending of so much in this world. Personally, we would be delighted to "go semi-monthly," as you put it, but it is only a hope for the future, and it hardly seems as if it would be realized very soon. There are lots of things we wish for AMAZING STORIES, the coming about of which is doubtful and in many cases not even to be hoped for. It is letters like yours that encourage us in our work and we can assure you that we have many desires, but few seem to materialize into facts.—EDITOR.)

Some Favorable Comments on Our
and on Morey's Covers

Editor, AMAZING STORIES:

I must compliment Morey on his they've been excellent for the last five (Dec., '34 to May, '35, in Canada). On the average his covers are better than his inside illustrations—colour always does show better than black and white. Keep him hard at work and we'll have a second Paul or Wesso.

The May, '35 A.S. was very good, most interesting in every way. Personally I think that "Lines of Time," by J. F. Fearn bids fair to be one of the best stories published in A.S. It starts off very well and I have great expectations that it will continue as good.

"Older than Methuselah" by S. A. Coblenz was very readable. A rather hackneyed plot but handled in Coblenz's satiric style.

Skidmore's delightful epics of those atomic personalities are well continued in "A Saga of Posi and Nega."

Keller's "White City" was good but very slow in starting the action.

"The Gypsies of Thos," by R. Frederick Hester was interesting.

Out of curiosity I dug up my old copies of A.S. and made a tally of the number of stories my favorite authors had written. The tally is only an approximation.

Keller 28; Verrill 22; Breuer 16; Coblenz and Vincent 14; Campbell runs his rival, Coblenz, close with 13; Meek and Olsen 9; Hamilton and Williamson 8; Kateley 7; Skidmore, Nathanson, Jones, Cloukey, Septama 6; Kostkos, Clare W. Harris 5; Flagg, Smith, Burt, Leslie F. Stone, Speaker, Wates, McLociard 4; Taine, Merritt, Saunders, Eshbach 3.

In addition to those mentioned above, I have a leaning toward the writings of Fearn, Hays, Kendig, Schlossel, Kober, Starzl, Leinster and Stephen G. Hale.

We haven't had a story by Meek, Taine, Starzl, Hays, Williamson, Wates for some time now. Can't you dig them up again?

I would like to buy, beg or steal the complete year of A.S., monthly, for 1932, from Jan. to Dec. inclusive. I would like to have the mags. in as good condition as possible, with covers preferably.

Yours to Greater Heights,

C. HOWES, 397 Davisville Ave.,
Toronto 12, Ontario, Canada.

(We are really indebted to you for your tally of the stories by different authors. We shall consider it a valuable reference for editorial use. Whether justly or not, we have a family feeling about those who have written a number of stories for us and feel

that in a sense they are *our* authors. Your letter will undoubtedly bring you a response from our readers and we will forward your request to our Circulation Department for an estimate.—EDITOR.)

Favorable Comment on a Number of Our Stories from an Australian Reader

Editor, AMAZING STORIES:

Since writing you, I have been looking over my copies of the magazine which range from October, 1933 with one exception to January, 1935, the latest. I have to offer my approval of these yarns as taken at random from among them; "Into the Hydrosphere," Neil R. Jones, the "Professor Jameson" series, are there more of them? "When the Universe Shrank" by Lewis Burt, very good, it may happen to us in the distant future, (who knows?) "Terror Out of Space" was fine. "Cat's Eye" by Harl Vincent, clever and interesting. "The White Dwarf," again by Lewis Burt. It was hard to leave alone. "Beam Transmission" by George H. Scheer, Jr., well I can't praise it enough. "Life Everlasting" by David H. Keller, I've run out of stock in praising them all. These other ones listed are fine and worthy of mention. "Velocity of Escape," "The Moon Pirates," "Through the Andes," "The Master Mind of Venus," "The Pool of Life," "The Rape of the Solar System," "The Sunless World," "Men Created for Death," "The Land of Twilight," "The World Aflame," the new (to me) serial "The Contest of the Planets" by John W. Campbell, Jr. is as your cover says, "Amazing." I can't wait long enough for the next episode. Morey's cover illustrating "Worlds Aflame" is one of the best he's drawn (or are they painted?) I have received from some of, how shall I put it, your, or our, readers letters asking about Australia, and things in general here. If other readers want to know a little about "Aussie" let them ask and I will try and answer their queries. Here's hoping for more and better yarns.

I noticed in December, 1934 Discussions a writer was urging a reprint of the "Skylark of Space" as a quarterly. (If it has been done could you send me one or tell me where I could get one?) I support the idea as a very good one.

JACK ABRAHAM,
91 Australia Street,
Camferdown, Sydney, Australia.

(We appreciate the testimonials, for that is what they amount to, to the stories in recent issues. AMAZING STORIES is much liked in your part of the world and it is very gratifying to us to have such a letter as yours come to us over ten or twelve thou-

sand miles of the great circle with so friendly a set of comments. "The Skylark of Space" has not been reprinted, but there is a possibility that it will come out in the near future in book form.—EDITOR.)

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912 and March 3, 1935,

Of AMAZING STORIES, published Bi-monthly at Springfield, Massachusetts for October, 1, 1935.

State of New York
County of New York ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Lee Ellmaker, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the AMAZING STORIES and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1935, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Teck Publications, Inc., 461 Eighth Ave., New York, N. Y.; Editor, T. O'Connor Sloane, Ph.D., 461 Eighth Ave., New York, N. Y.; Managing Editor, None; Business Manager, Lee Ellmaker, 461 Eighth Ave., New York, N. Y.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Lee Ellmaker, 461 Eighth Ave., New York, N. Y.; Teck Publications, Inc., 461 Eighth Ave., New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

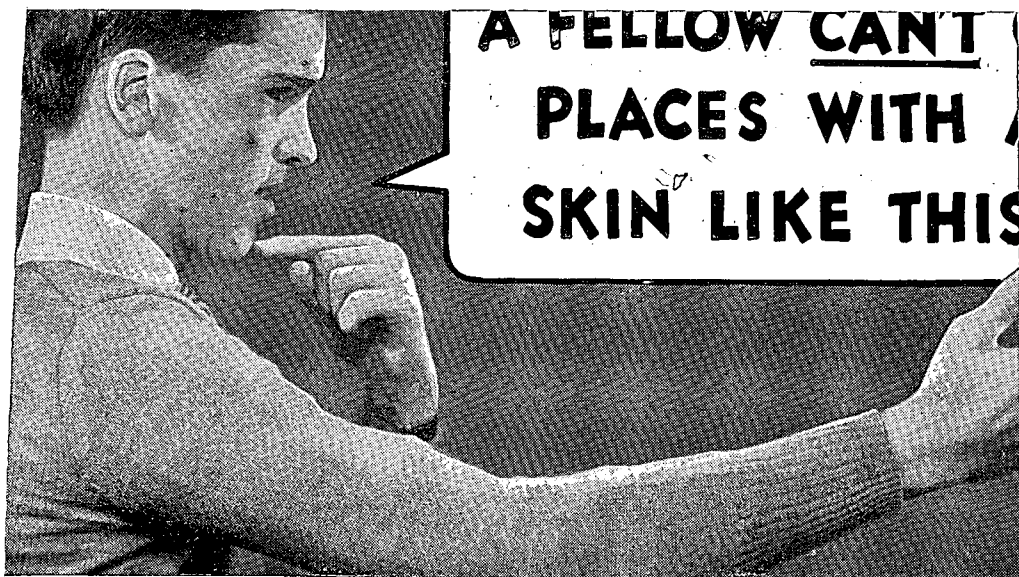
4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is (This information is required from daily publications only).

LEE ELLMAKER, Publisher.

Sworn to and subscribed before me this 25th day of September, 1935.

EDYTHE E. TOMPKINS, Notary Public
Bronx County
66-T-36 New
Register's No.
Com



**But Pete
is soon
pimple-
free and
“out
stepping”**



**Don't let adoles
pimples make a h
out of YOU**

Between the ages of 12 and 25, important glands of the body become active. This causes disturbance throughout the body. poisons get into the blood, irritate the skin, and break out in pimples.

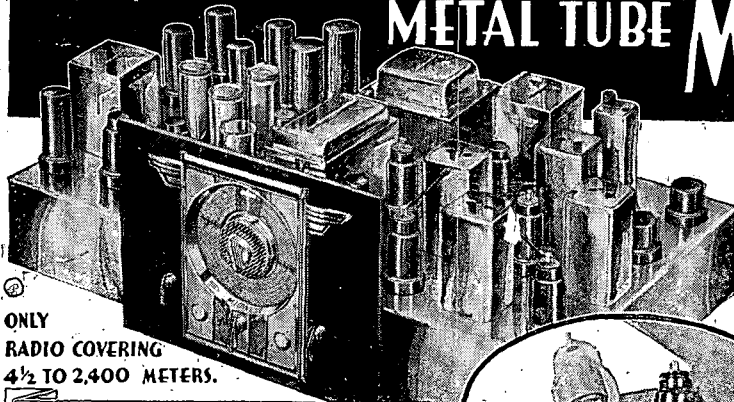
But you can clear skin of poisons out of your blood. Eat Fleischmann's Yeast. Then pimples disappear! Eat Fleischmann's Yeast before meals, until skin

SAVE UP TO 50% BY BUYING YOUR RADIO *Direct from* MIDWEST LABORATORIES

Glorious Tone Realism.. World-Wide Entertainment Guaranteed!
with New 1936 SUPER *Deluxe*

METAL TUBE

MIDWEST

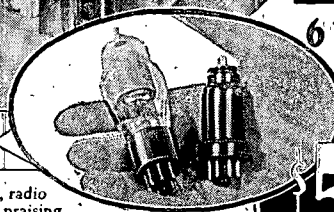


ONLY
RADIO COVERING
4½ TO 2,400 METERS.

18 TUBE
RADIOS

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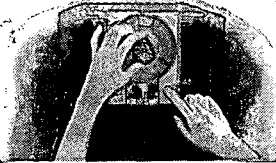
30 Days FREE Trial!



WORLD'S GREATEST
RADIO VALUE

59.50
with New
GIANT
THEATRE-
SONIC
SPEAKER

TERMS AS LOW AS \$5.00 DOWN



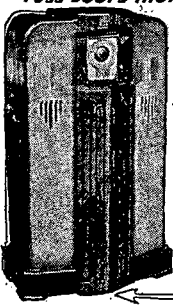
PUSH-BUTTON TUNING
(Noises Suppressed)

Now, Push-Button Silent Tuning is offered for first time! Simply pushing Silencer Button hushes set between stations... suppresses noises. Pressing Station Finder Button automatically indicates proper dial position for bringing in extremely weak stations.

Acousti-Tone V-Spread Design
(Patent Pending)

...Establishes new radio style overnight! The V-Front Dispersing Vane was developed by Midwest engineers as a result of a study of directional effect of the Midwest Full Scope High Fidelity Speaker. These Vans spread the beautiful lacwork of the "highs" throughout the entire room in a scientific manner... directing the High Fidelity waves uniformly to the ear. Send for new FREE 40-page catalog. It pictures the complete line of beautiful 1936 Acousti-Tone V-Spread consoles... and chassis... in four colors.

FULL SCOPE HIGH FIDELITY
Brilliant!



Concert Tone
Now, get complete range of audible frequencies from 30 to 16,000 cycles, being transmitted by four new High Fidelity Broadcasting stations—WIXBS, WQXB, W2XR and W6XAL. Glorious new Acousti-tone is achieved assuring life-like, crystal-clear "concert" realism.

V-FRONT

EVERYWHERE, radio enthusiasts are praising this amazingly beautiful, bigger, better, more powerful, super selective, 18-tube 6-tuning range radio. They say it is a tremendous improvement over Midwest's 16-tube set, so popular last season. It is sold direct to you from Midwest Laboratories at a positive saving of 30% to 50%. (This statement has been verified by a Certified Public Accountant who conducted an impartial survey among representative Ohio, Kentucky and Indiana radio retailers.) Before you buy any radio, write for FREE 40-page 1936 catalog. Never before so much radio for so little money. Why pay more? You are triple-protected with: One Year Guarantee, Foreign Reception Guarantee and Money-Back Guarantee! This super Midwest will out-perform \$200 to \$300 sets on a point-for-point comparison. That is why nationally known orchestra leaders like Fred Waring, George Olsen, Jack Denny, Ted Fio Rito, and others use Midwest sets to study types of harmony and rhythmic beats followed by leading American and Foreign orchestras.

80 ADVANCED 1936 FEATURES

Scores of marvelous features, many exclusive, explain Midwest super performance and thrilling world-wide all-wave reception... enable Midwest to bring in weak distant foreign stations, with full loud speaker volume, on channels adjacent to locals. Only Midwest offers so many features... only Midwest tunes as low as 4½ meters... only Midwest gives the sensational new Push-Button Tuning feature, etc. See pages 12 to 21 in FREE catalog for description of the 80 features. Read about advantages of 6 Tuning ranges... offered for first time: E, A, L, M, H and U. They make this Super De Luxe 18-tube set the equivalent of six different radios... offer tuning ranges not obtainable in other radios at any price!

DEAL DIRECT WITH
LABORATORIES

No middlemen's profits to pay—you buy at wholesale price direct from laboratories... saving 30% to 50%. Increasing costs are sure to result in higher radio prices soon. Buy before the big advance... NOW... while you can take advantage of Midwest's sensational values. You can order your Midwest 1936 Full Scope High Fidelity Acousti-Tone radio from the 40-page catalog with as much certainty of satisfaction as if you were to come yourself to our great radio laboratories. You save 30% to 50%... you get 30 days FREE trial... as little as \$5.00 puts a Midwest radio in your home... Satisfaction guaranteed or money back. Write today, for FREE catalog.

SAVE
UP TO 50%



Thrill to new explorations in sections of radio spectrum that are strangers to you. Every type of broadcast from North and South America, Europe, Asia, Africa and Australia is now yours. Send today for money-saving facts.

GEORGE OLSEN PRAISES
MID-LINE TONE REALISM

Long Island, N. Y.—After comparing many different makes, I finally decided upon Midwest. It out-performs other radios costing almost twice as much. The crystal-clear tone is so life-like that it sounds as though I am in the studios, actually hearing artists performing.



TODAY'S FINEST RADIO
SAYS TED FIO RITO

My new Midwest is finest radio I have had pleasure of hearing. Bass-Treble control is marvelous... enables one to hear every instrument in orchestra.



METAL TUBES

This Midwest is engineered from the ground up to see either the new METAL tubes or glass-metal counterpart tubes. Octal sockets and newest circuits permit use of either type... just as you desire.

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Without obligation on my part, send me your new FREE catalog, complete details of your liberal 30-day FREE trial offer, and FREE Miniature Restoring 18-tube Dial. This is NOT an order.

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